THE

Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

VOL. XI. CHICAGO, AUGUST 25, 1888. No. 8.

AN ADDRESS

ON

THE PRINCIPLES OF PRACTICE INVOLVED IN THE EXTIRPATION OF THE UTERINE APPENDAGES WHEN NOT THE SEAT OF TUMOR.

Delivered by invitation before the Medical and Surgical Society of Western Illinois, at Jerseyville, Ill., August 1, 1888.

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MR. PRESIDENT AND GENTLEMEN:—In accepting your kind invitation to address you—an honor for which I am profoundly thankful—I find myself embarrassed at once by a wealth of topics and by a poverty of ability. I take it, however, that I will come nearer engaging your attention and fulfilling your expectations by discussing some subject connected with the department of practice with which I am identified. But even within that limitation I have left me a multitude of themes; for the progressive spirit of gynecology and abdominal surgery has brought to the surface many perplexing problems of importance alike to the specialist and to the general practitioner. I may be pardoned for the reflection that in many of these questions, involving considerations of operative procedure, and in which the success of the operation depends upon its timely performance, the burden of responsibility rests with the general practitioner. It is he who first sees the case; it is he who should first recognize, or at least suspect, its pathology; and it is he who should first at least suggest the necessary treatment. The future success of abdominal surgery, in its broader extensions, in this country, depends upon the recognition and adoption of this rule by physicians who are the first to attend these cases.

The improved statistics in ovariotomy now being furnished by the leading American operators is due chiefly to this phase of progress by the general profession. A distinguished English ovariotomist was once showing me a case of small and easily movable ovarian cyst. "That," said he, "is the way we get our patients since we educated the profession up to early operations and no tappings." In this regard our own profession is nearly as far advanced as the British. In the last five years I have not operated upon a single case of ovarian tumor that had been previously tapped, and the majority of my cases have been advised to have the operation done early. This is because our profession has grasped the principles upon which success in ovariotomy depends; and it is safe to say that it will act with similar promptness and wisdom in advising laparotomy for other conditions just so soon as the expediency of the operation and the principles upon which it is based are demonstrated with equal conclusiveness. I find myself, therefore, readily prompted to discuss to-day, in a very brief way, a no less important theme than the principles of practice involved in the extirpation of the uterine appendages when not the seat of tumor. I am not unmindful that I may be venturing in where angels might fear to tread. In abdominal surgery the accepted truth of to-day bids fair to become the demonstrated error of to-morrow. This was recently demonstrated by my distinguished friend, Grieg Smith, who found it necessary to practically rewrite his already classical work on abdominal surgery within six months after it had been out of print, so great had been the progress in so short a time. You will therefore pardon me if, at the outset, I declare that I do not to-day commit myself to any final conclusions on the questions which I may discuss.

At the outset let me emphasize a few preliminary points. The uterine appendages—ovaries, parovarium and tubes—are in no sense vital organs. Their presence is not essential to either the life or the physical well-being of a woman. Indeed, her whole sexual apparatus appears to be tucked away in one corner of her body so as to be of the least inconvenience after having fulfilled the temporary purposes for which it was created. But even in this remote position, and whether in a state of functional activity or not, these organs sustain certain relations which make them objects of at least pathological importance; and hence it is well enough to bear these relations in mind. The proximity of the appendages to the remaining pelvic viscera and to the intestines is of less importance than the blood and nerve supply. It

is therefore well enough to remember that the appendages get their blood from the ovarian arteries and from a few anastomosing branches of the uterine; that they get rid of their blood chiefly through the Pampiniform plexus; and finally, that both arteries and veins are situated low down in the posterior fold of the broad ligaments. The significance of this arrangement is peculiar, viz.: that, while displacement of these organs disturbs, their removal does not destroy, the circulation. It is also well enough to remember that the nerve supply comes from the hypogastric plexuses of the sympathetic system, and that these plexuses, in turn, are supplied with communicating branches to the lumbar and sacral ganglia and to the sacral nerves. The significance of this arrangement is that, although primarily supplied by sympathetic filaments, yet, by virtue of secondary connections with the spinal system, the appendages become central telegraphic stations whence impressions, pleasurable or painful, healthy or unhealthy, are transmitted to the remotest nook and cranny of the system. It should be remembered, too, that the function of the ovary cannot be exercised if the matrix of that organ be so hardened that the maturing follicle cannot approach the surface, nor when the white tunic becomes so toughened from disease that the egg, having reached the surface, cannot escape. And it should be remembered, finally, that the Fallopian tubes, to be of any account at all as egg-carriers, must be open at both ends. It is in these facts that extirpation of the appendages finds its chief justification, but we can spend a few minutes in further considering

TAIT'S OPERATION.

About 1868 Sir James Y. Simpson was treating all cases of retro-uterine displacement by reposition and pessaries, and he was treating all cases of retro-uterine tumefaction in which the mass could not be demonstrated as distinct from the uterus as cases of uterine displacement. The results were not satisfactory, particularly to a young assistant, who once ventured the suggestion that the retro-uterine mass might be a distended Fallopian tube (which had just been discussed in France), and that it might be removable. The idea was frowned upon by the autocrat of the Royal Infirmary. In a short time the young man sought a new field of labor south of the Tweed, and carried his idea with him. On February 11, 1872, at Birmingham, Mr. Lawson Tait — for Simpson's assistant was no other than he — successfully opened a woman's abdomen and removed her uterine appendages. This was the beginning of the operation of extirpation of the uterine appendages for inflammatory disease, and the beginning of an intelligent pathology of what Sir Spencer Wells calls "these out of the way organs." The successive revelations of pathology which have ensued upon this bold and daring step are of vast importance. We now know that so soon as the Fallopian tube becomes inflamed its fimbriæ curl inward and become sealed by plastic lymph; that the ordinary mucous secretion, finding no adequate vent through the normally narrow uterine orifice of the tube, accumulates; that if the exudation be intense or of gonorrhœal origin it becomes purulent; that if less intense and non-specific it remains merely mucous; that if it occur at or about the molimenel period it may be sanguineous; and finally, that if in consequence of progressive suppuration there is spontaneous discharge of the contents into the uterus the collapsed walls, now denuded of their epithelium, may become adherent. In this way we have (*a*) pyosalpinx, (*b*) hydrosalpinx, (*c*), hæmatosalpinx, and (*d*) desquamative endosalpingitis with adhesions.

And just here permit me to call attention to a point which I deem of great importance, and that is that the one condition common to all these various forms of disease is occlusion. I know no better way to emphasize this fact than by calling your attention to the specimens which I herewith exhibit to you, and which I took at random from my collection. They are the tubes and ovaries which I removed from a young lady who had been under every form of conservative treatment for over two years. You will observe that the tubes are tightly closed and that they are distended by pus. The plastic exudation around the fimbriated extremities is extensive and well organized and, as you observe, has fairly soldered each tube to its respective ovary. You conclude at once that, first, an ovule could not get into the tubes; next, that if it could get in it would be killed by the highly acid purulent contents; and finally, that if it could get in and could survive the pus, it could not get out, It is evident that tubes in such a fix can subserve no other than pathological purposes; that, indeed, in a functional sense they are dead, and dead, too, beyond the hope or possibility of resurrection.

The latter declaration may be, indeed has been challenged. While in Philadelphia a few years ago, Professor Parvin told me that during his residence in Indianapolis he had heard of a doctor living somewhere in Indiana who thought he had an idea that he could run a sound through the womb into the tubes, drain away their contents and thus cure them. We both laughed at the vagary, and so far as I was concerned the mad proposition was forgotten until I encountered it again in the *Medical Register* some time last winter. It was from the pen of a Kansas City man that time; but I have heard nothing from him since I showed him the error of his way. In the *British Medical Journal* for April 21 of this year, I was surprised to find Dr. More Madden, of Dublin, commit himself to the same fallacy, quoting

this very Indiana method of treatment as something new with himself. It was heralded as his discovery. Now, the discovery of gravitation by Newton was an accident; the discovery of the expansive power of steam by Watt was an accident; and hence it was eminently proper that Madden's discovery also should have its birth in an accident. We learn, therefore, that while exploring the uterus he was surprised "to find the sound pass in up to the handle, and on palpation to discover that it had obviously entered the right Fallopian tube." The isolated circumstance was forthwith elaborated into a new tenet of conservative (?) surgery—as practiced by Madden. Now, as a matter of history, even my Indiana neighbor was anticipated in his idea by Tyler Smith, who may be pardoned for having entertained the thought when we consider the defective knowledge of pathology and surgery in his day; but even he redeemed himself by repudiating his wild fancy. It is difficult to treat the matter seriously in this day of advanced intelligence.

The objections to the proposed practice are simply insuperable. In the first place, none can tell whether he has pus or something else within the tube; while, in the next, no refinement of manual dexterity will enable one to determine whether he is putting the sound into the tube or through its attenuated walls into the peritoneum. The danger is obvious. But should the tube be successfully drained in this way, it is of no account anyhow, for the distal extremity remains closed. Here we pause. We must wait until some mechanism is devised with which to disentangle the fimbriæ. We turn with confidence to the ingenuity of Madden. We shall have no surprise when we see him emerging from his seclusion with some beautiful device—combining, may be, the principles of the glove stretcher and the knitting machine.

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BATTEY'S OPERATION.

On the 17th day of August, 1872, Dr. Robert Battey, of Rome, Ga., successfully extirpated the normal ovaries from a woman for the arrest of the menstrual function. The case, which was reported in the *Atlanta Med. and Surg. Journal* for September, 1872, was the first recorded one for extirpation of any part of the uterine appendages for any purpose whatever. The technique of the operator was similar to that which had formerly been practiced by Thomas for the removal of small ovarian tumors through the vagina, and which he had described under the head of "vaginal ovariotomy." Battey's idea was to "arrest diseased and pernicious ovulation and to effect the change of life." It was based upon the then accepted but now fairly exploded doctrine that menstruation is necessarily dependent upon ovulation; hence the ovaries alone were removed. The operation as practiced by Battey several years after its inauguration, consisted in opening the vagina through the cul-de-sac; the ovaries were dragged down by the fingers, separated by *écrassement;* no ligature was applied, no drainage-tube was inserted, and the wound was left open. Blood clots which subsequently formed were raked out by the finger, and when suppuration began, as it frequently did, the peritoneum was washed out by means of a gum catheter. Three to five assistants were required, the time was generally an hour or more, and the mortality was 20 per cent. This operation is, fortunately, a thing of the past, a chapter of history. The procedure which now goes by the name of "Battey's operation" is, strictly speaking, nothing more or less than an abdominal section for the removal of the healthy ovaries alone, undertaken for the purpose of precipitating the menopause.

There are three reasons why this operation is now but seldom done, viz.: first, the removal of the ovaries alone is no guarantee of the cessation of menstruation; second, the tubes, even when healthy, can be of no value and are only potential for mischief when left behind; and third, the tubes can be removed with the ovaries without complicating the operation. The fact remains, however, that the ovaries, whether diseased or not, may be removed under certain conditions and the healthy tubes left behind, a mere question of remote possibilities alone being involved. The field, however, is limited.

The operation may be done with propriety in cases of rudimentary uterus, giving rise to distressing menstruation—circumstances which first induced Battey to do the operation. I have on hand a case of extrophy of the bladder and congenital absence of the vagina; menstruation has occurred from the rectum. I can detect ovaries by rectal examination. I shall remove the ovaries and of course the tubes, too, if I can find them, as soon as cool weather arrives. There are cases of obscure pelvic pain which depend upon chronic ovaritis. In these cases we may have interstitial induration or peripheral exudation with adhesions. The matured Graäfian follicles, being unable to burst, undergo cystic degeneration. Either of these three conditions is the source of exquisite pain, constant, but aggravated at the menstrual period, and interfering to an important degree with the general health. Often these diseased organs become the nidus of more active inflammatory trouble which in turn may result in abscess. One of my fatal cases presented precisely this state of affairs. It came to me from Dr. Cook, now of the Oxford Retreat. The ovary was adherent to the pelvic wall, and just beneath the organ a small abscess had developed, which was diagnosed before operation, but which had already become the source of septic mischief before I put the knife to the case. An earlier operation would have saved her, but fortunately neither

Dr. Cook nor myself were responsible for the delay.

Irreducible displacement of the ovary, the organ enlarged and hyperæsthetic, lying in the cul-de-sac and acting as the cause of dyspareunia and general ill-health, is another legitimate indication for the removal of at least the diseased ovary. I have done the operation in several cases, all of them successful not only as to recovery from the operation, but as to ultimate results.

[Dr. Reed here exhibited a number of specimens from his cases illustrative of the pathological conditions to which he had alluded.]

THE "SPAYER" AND THE "NEURO-GYNEATRIST."

There are certain other cases for which removal of the ovaries alone is practiced and which I would really prefer not to discuss, but candor impels me to the task. When Battey christened his operation he called it "normal ovariotomy," thus implying that it was intended for the removal of healthy ovaries; and Goodell made bad matters worse by speaking of the removal of the appendages as "spaying,"—an absurd misnomer. At any rate, the idea of removing healthy ovaries for the relief of pain led others to remove them for other nervous phenomena; there presently grew up a serious abuse of the original idea of Battey, and doctors were to be found all over the country who were, in very fact, "spaying" women for the relief of hysteria, epilepsy, hystero-epilepsy and allied nervous disorders. The recording angel alone knows the mortality. Conservative gynecologists on this side of the Atlantic called a halt. The Birmingham school planted itself firmly upon the proposition that none but manifestly diseased appendages should be removed. This edict has been accepted. We now remove the appendages —ovaries or tubes as may be—in those cases only when, on exploratory incision, we find them the seat of gross disease, and we resort to exploratory incision only when the symptoms point strongly to an ovarian or tubal origin of the disease.

But those of us, of the more conservative turn of mind, who feel that we have been somewhat instrumental in establishing these limitations to the practice, and who feel that we have thus delivered the unfortunate neurotic from the hands of the wanton "spayer," are not yet relieved of our solicitude. We see the fair object of our concern drifting into other and more terrible snares. Our friends, the alienists and neurologists, inform us that women's diseases, "their antecedents and sequences, have a peculiar fascination for the neurologist." The wily nerve doctor, to put himself in line for these cases, proposes to transform himself into a "neuro-gyneatrist." This specialist, *sui generis*, has only been christened and has not yet become a potent factor in womb affairs. Preparations for activity have only gone to the extent of arranging an artistic vocabulary. From the specimens at hand one could easily fancy that the victim of an obscure pelvic pain, on consulting the "neuro-gyneatrist," would be informed that as a matter of fact she had a "visceral neurosis," which, although a "gyneasic disease," was yet one which existed chiefly in its "neural and psycho-neural factors;" or, to be more explicit, she has "inherent neuropathic degeneracy," the combined result of "ancestral nerve overstrain" and "acquired neuropathic decadence;" that as a final result there exists "nerve apathies" and "sequent neurasthenia," associated with more or less "afferent nerve insensibility" and "central motor atonicity;" and that, manifestly, she is in need of a treatment which will excite the "contractile tonicity of transmitted peripheral excitation over the vaso-motor neural mechanism of the pelvic viscera."[1] Then the poor woman, after she recovers from her faint, naturally seeks shelter in the private sanatarium of that next product of progressive evolution in specialism—the Psycho-Neuro-Gyneatrist!

EXTIRPATION OF APPENDAGES VS. APOSTOLI'S TREATMENT FOR MYOMA.

But while we decry "spaying," and laugh at the "neuro-gyneatrist," there are circumstances under which the removal of the normal appendages for their influence upon at least a part of the nervous system, is found to be a most beneficial expedient. I allude to cases of uterine myoma. There has grown up a strange misconception of the way this operation effects a cessation of the hæmorrhage and a reduction of the size of the tumor in these cases. The prevalent impression is that the circulation is cut off. A moment's reference to the anatomical *résumé* given at the beginning of this address will show that the ovarian arteries are not touched in this operation, nor are any of the important vessels lying deep in the folds of the broad ligament. The interception of the vaso-motor nerve supply is the more plausible explanation. But whatever may be the *rationale* of the operation the fact remains that as an alternative to hysterectomy it has proven a life-saving measure. Thus, in the Spark Hill Hospital from 1879 to 1886 inclusive, the removal of both ovaries and tubes was practiced in 91 cases of myoma with 87 recoveries; while during the time, in the same institution and by the same operators, 42 hysterectomies yielded but 25 recoveries. But notwithstanding this excellent exhibit, ablation of the appendages in these cases promises to be superseded by the Apostoli treatment. I myself have passed through three epidemics of electricity. Another one is now upon us. I acknowledge that I am affected with a mild form of the disease. The potter's-clay electrode is a feature of my equipment. I am free to admit that I have seen myomata grow smaller and hæmorrhage cease

[1] C. H. Hughes, M.D. "Neural and Psycho-Neural Factor in Gyneasic Disease." Alienist and Neurologist, April, 1888.

under its use; and in other cases I have seen it fail completely. I, however, feel encouraged, and my conservative instincts lead me to hope for the ultimate success of the treatment, providing, of course, that the ascertained results shall show it to be safer as to primary mortality, and equally satisfactory as to ultimate results. But this exhibit has not yet been made; and until it is it may be well for us not to abandon the old for the new.

REMOVAL OF APPENDAGES IN PUERPERAL PERITONITIS.

A more recent extension of this department of surgery has come about through a knowledge of the condition of the appendages in puerperal and purulent peritonitis. I have not yet had the opportunity of doing this operation, although I proposed it in a case of abortion at two months. It was on the third day and the temperature was 104°, with extreme tenderness and some tympanites low down in the belly. The attending physician was not convinced of "the new pathology," as he termed it, and for lack of his cordial support the operation was declined by the patient and her friends. The case died three days later. I herewith present to you the uterus and appendages, which were removed at the autopsy. You will observe that the tube on one side presents a typical pyosalpinx of long standing, and that its walls are extremely dark and obviously gangrenous. There is here, near the occluded distal extremity, a slight perforation which bears evidence of having been an ante-mortem condition. Now, what relation did this perforation bear to the purulent peritonitis which proved fatal in this case? The tube on the other side is also occluded, but from the recent lymph about the fimbriæ and from the character of the contents, the probabilities are that occlusion took place only after the inception of the inflammation following the abortion. If, now, the gangrenous appendages had been removed and the peritoneum washed out and drained, there would have been a strong probability of recovery. I have recent private advices that Professor Tait has lately had eight consecutive recoveries under this line of treatment. Dr. Thos. Savage recently presented to the British Gynecological Society (*British Gyn. Jour.*, April, 1888), appendages which he had removed from a case of puerperal peritonitis. The ovaries were found enlarged and black; the intestines matted together by recent lymph, and the abdominal cavity contained a pint or more of non-offensive purulent fluid. "Medical men," he said, "were becoming alive to the necessity of calling upon specialists to operate, but they experienced difficulty in deciding when and at what period they would be justified in doing so." He then advised that all lying-in cases having feverish symptoms should be operated upon so soon as fluid could be detected in the abdomen; and I accept this as the principle which, for the present, must guide us in undertaking this class of cases.

REMOVAL OF APPENDAGES FOR INTRAPERITONEAL HÆMATOCELE.

The splendid pioneer work of Dr. Francis Imlach, of Liverpool, in establishing the relation of extraperitoneal hæmatocele to ruptured tubal pregnancy, has made us familiar with another set of conditions under which extirpation is practiced. He found rupture of the tube to be the underlying condition in the majority of all cases of intraperitoneal accumulation of blood, and he removed the appendages for the purpose of controlling the bleeding point. He reported sixteen successful cases two years ago. I had the pleasure of reporting my first successful case to the Ohio State Medical Society in 1887, and I have since had two more cases, both successful. The operation is simplicity itself. Open the belly; scoop out the blood clots; wash out the peritoneum, and remove the appendages on the affected side. As compared with the let alone treatment operative interference presents a small mortality—only two deaths in sixty cases which I have collected. If we are to judge of an operation by its results we may fairly state that this one has earned a place in surgery; and if we are to consider the pathological necessity for an operation we may say that in this instance it is simply imperative.

THE "UNSEXING" OF WOMEN.

There is a phase of this discussion which must not be omitted. It is made important by the recent utterances of gentlemen no less prominent than Dr. More Madden to the effect that extirpation of the appendages for conditions such as I have been describing unsexes a woman and deprives her of the power of propagation; and I am apprehensive that the delusion is entertained by other very respectable members of the profession who have not looked into the matter. I feel that from what I have already said, and from the specimens which I have already exhibited, you are convinced of the absurdity of the idea. As a matter of fact the operation could not deprive a woman of her fecundity, for the very good reason that the incurable disease with which she is afflicted has already deprived her of that function, and there is no possibility of its restoration. But I presume reference is had to the notion that following the removal of the ovaries there is a decadence of the sexual appetite. In the first place this is a mistake, and has been denounced as such by every operator of importance, including both Battey and Tait, who have pointed out that the removal of painful organs from the pelvis is promotive rather than destructive of sexual feeling. But grant that it were true. Is a woman to go through life racked with pain that she may satisfy the lust of a man? The proposition is too repul-

sive to be discussed in decent society, yet this is logically just what Madden is teaching. There are others, doubtless, who are prompted to advise against operation for the reason that the conservative line of treatment is vastly more remunerative to the practitioner; but I don't know that this view helps matters much, for it amounts only to a choice between pruriency and venality.

EXPLORATORY INCISION.

It were idle to say that diagnosis of these "out of the way" organs is easy. As a rule, it cannot be made at a single examination, but has to be arrived at after a study of the case embracing numerous examinations and covering a considerable period of time. Often the diagnosis cannot be carried beyond the point of presumption without an exploratory incision. Here is another point on which the profession has gone into error. Mr. Tait inaugurated exploratory incisions for the purpose of confirming presumptive diagnosis, and announced the definite limitations under which he did the operation; but the profession at once exclaimed, "Tait says when you don't know what is the matter with a woman cut her belly open and see," and many of them did so. Now, Mr. Tait never said anything of the sort; but he did say "that in every case of disease in the abdomen or pelvis, in which the health is destroyed or life threatened, and in which the condition is not evidently due to malignant disease, an exploration of the cavity should be made." In this Mr. Tait shows a spirit, not of recklessness, but of marked conservatism. I have, for instance, successfully removed a 30-lb. sarcomatous tumor of the ovary in a case in which the symptoms of malignancy were evident; and the records of Spark Hill furnish another instance. The time has gone by when hands must be kept off all malignant cases. The law might therefore be changed to read: "when the condition is not evidently due to manifestly *irremovable* malignant disease."

CONCLUSIONS.

In conclusion, then, let us answer the inquiry, When should the general practitioner advise extirpation of the uterine appendages?

1. In cases in which, after adequate investigation, he is assured that there is intra-tubal accumulation.

2. In cases in which, from congenital deficiency of some of the organs, there can be no healthy exercise of the menstrual function.

3. In cases of chronic ovaritis, giving rise to intolerable pain, and in which cure has been demonstrated as impracticable by conservative means.

4. In cases of irreducible displacement of the ovaries giving rise to severe pain.

5. In cases of large uterine myoma giving rise to dangerous hæmorrhage, and in which the electrical treatment has failed after a reasonable trial, and finally, in which extirpation of the appendages can be practiced with greater safety than hysterectomy.

6. In cases of puerperal peritonitis and intraperitoneal accumulations in which, after opening the abdomen, the appendages are found diseased.

7. In cases of intraperitoneal hæmatocele in which, on exploration, a bleeding point is found in a ruptured tube.

8. Exploratory incision should be advised in all cases in which any of the foregoing conditions are reasonably suspected, and in all cases "of disease of the abdomen or pelvis in which the health is destroyed or life threatened, or in which the condition is not evidently due to" irremovable "malignant disease."

ORIGINAL ARTICLES.

OXYGEN ENEMATA AS A REMEDY IN CERTAIN DISEASES OF THE LIVER AND INTESTINAL TRACT.

Read in the Section on Practical Medicine, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY J. H. KELLOGG, M.D.,

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The importance of the rôle played by oxygen in the human system has no parallel among the other substances required for the healthy maintenance of the body and its functions. A man may live a month without food, a week without water, but dies in a few minutes when deprived of oxygen. Oxygen is the vitalizing agent of animal and vegetable life. It aids both in building up and in tearing down those complex molecular compounds which characterize all living forms. The intensity of the life which an animal lives, is in exact proportion to the amount of oxygen which it breathes. The sluggish life of the frog is the natural result of its imperfect breathing apparatus, just as the astonishing activity of the humming bird is rendered possible by the perfection of the respiratory system.

The reception into the body of an increased amount of oxygen means an increased amount of vital work. Tissue building, and tissue disintegration are only possible by the aid of oxygen. Glandular activity, either secretory or excretory, is equally dependent upon a supply of oxygen. The process of digestion, the most essential element of which is gland action, is hence very clearly dependent upon the supply of oxygen. That this is not merely a theoretical conclusion, or a deduction of physiological chemistry, is evidenced by the prodigious digestive powers of the woodsman and the mountaineer, and the correspond-

ingly feeble digestive ability of the persons of sluggish or sedentary habits. The chronic dyspeptic who resists the therapeutic influence of pepsins and pancreatins, peptones, and all sorts of artificial peptogens, and the most carefully prepared medicinal prescriptions, sometimes runs away from the polypharmacy of his physicians and spends a few weeks in the woods, in the mountains, at the seashore, anywhere out-of-doors, pays no attention to diet, eschews digested foods and liver stimulants, and in a month comes home with a clean tongue, and stomach intact, chiefly because he has been taking into his system daily an extra supply of oxygen. The clearing out of organic rubbish from the nooks and corners of the system, the better heart action, the quickened vital activities of the whole body, have enabled his digestive glands to make a better quality and larger quantity of digestive fluids. By this means, the septic condition of his alimentary canal has been overcome. The abnormal activity of microbic ferments has been restrained, and the toxic influence of the ptomaines and other poisons developed by their action has been prevented. The albumen and gluten and other nitrogenous elements of the food, instead of being converted by fermentations into unusable and obnoxious compounds, to be eliminated by the kidneys and other emunctories, are now made into normal peptones, good blood, and finally organized into nerve and muscle, giving strength and vigor in place of the old feebleness and enervation. The starch, sugar, and fats, instead of being converted into alcohol, carbonic, acetic, and butyric, acids, and thus worse than wasted, are now supplied to the blood in such form that the body is provided with ample supplies of heat and force, and has a surplus to store away, thus making a gain in flesh. It would be unfair to claim that oxygen is the only factor in the production of this change, but certainly it is the most potent one.

The wonderful vitalizing and invigorating influence of oxygen is unequalled by any other agent in nature. I have seen a patient suffering with double pneumonia, with purple lips, livid cheeks, glazed eyes, a fluttering, almost uncountable, pulse, breathing shallow and at the rate of fifty a minute, suffering great distress, and apparently just at death's door—I have seen such a patient revived in a most marvellous manner, by the inhalation of pure oxygen. The normal color returned to the cheeks and lips. The eyes brightened, the pulse became stronger and slower, the respiration fuller and less frequent, and the patient fell into a quiet slumber, awakening only when the oxygen was withdrawn. The subtle influence of oxygen, when condensed and made active by its combination with the red corpuscles, is something which we may not fully understand, but we must admit the facts of experience, and of physiological science which attest the marvellous energy of this simple substance in stimulating and supporting the vital activities of the body.

I have made use of oxygen by inhalation for a number of years in various conditions, having been led to do so by what I learned of its use and apparent results while pursuing medical studies in Paris. I have seen some good results from its use in this manner, especially in pneumonia, and emphysema. The great objections which I have found to its use in this manner have been these:

1. The difficulty of making the blood take up, through the pulmonary mucous membrane, much more oxygen when breathing pure oxygen than when breathing ordinary air. The air contains about one-fifth its bulk of oxygen. Of this, not more than one-fourth is ordinarily removed during respiration. There being such a surplus of oxygen in the air, the addition of any amount, even to the extent of providing the lungs with pure oxygen, does not very greatly increase the amount taken up by the blood, except in cases such as pneumonia and emphysema, in which the amount of air received into the lungs is abnormally small, and the amount of carbon dioxide in the blood abnormally large.

2. The great expense involved in administering the remedy, if used in such quantities as to be of any material value. It could hardly be expected that a few breaths of pure oxygen once or twice a day would accomplish any very great therapeutic results. This would be very much like adding to the rations of an under-fed man two or three kernels of corn, when he was already receiving a hundred times as much several times a day. I have estimated that to increase the amount of oxygen actually received into the blood in twenty-four hours, so small an amount as one per cent. would require the respiration of about twenty-two cubic feet of oxygen gas, the actual cost to make which would be not less than two dollars, and if purchased, the cost would be fully three times as great.

3. A third objection to the use of oxygen by inhalation for the treatment of disorders of the stomach, intestines, and liver, is the fact that so very minute a proportion of the small amount of oxygen received ever reaches the diseased parts, they receiving only their proportionate share of the total amount taken in by the lungs, so that really very little benefit could be expected to accrue to these organs by the use of oxygen in the ordinary method. When making some experiments with sulphuretted hydrogen by the method of Bergeon, the idea occurred to me that oxygen might be used in the same way, and I at once saw the great advantage of using oxygen in this manner for diseases of the digestive organs, and especially the liver, since oxygen taken into the intestines would be absorbed by the portal

vein, thus going direct to the liver, instead of being distributed to the whole body.

I had at this time under my charge a most obstinate case of lithiasis. The patient had had for a long time a very abundant deposit of uric acid and urates. A non-nitrogenous diet, copious water drinking, and a variety of remedies, had apparently no influence upon this symptom. The patient was losing flesh and strength, and was scarcely able to be about. Skin muddy, sclerotics dingy, tongue foul, constant headache, and a brassy taste in the mouth. I was deterred from attempting to employ the gas by enema for some weeks after the idea occurred to me, by the reports of pain occasioned in the use of sulphuretted hydrogen enema by the admixture of air. I determined to make the attempt, however, and on June 20, 1887, by my request, one of my assistants, administered to the patient two litres of pure oxygen gas. The treatment was repeated daily for about four weeks. After the first three days, both the uric acid and the urates wholly disappeared from the urine, and did not again reappear while the patient was under treatment except on two occasions, when treatment was omitted for a day or two, soon after the beginning of the treatment, and then in only very slight amount. The brassy taste disappeared from the mouth, tongue became clean, the eyes and skin clear, the headaches ceased, the patient gained several pounds in weight. All these improvements in symptoms appeared within a few days after beginning the oxygen enemata.

That oxygen may be taken up by the intestinal mucous membrane, or that an interchange of oxygen and carbon di-oxide may take place through this membrane, might be inferred from well-known facts in comparative physiology. For example, in certain fishes the mucous lining of the alimentary canal performs a very important part of the work of the respiratory system. Some members of the gar family are killed almost as quickly by cutting off the supply of oxygen to the alimentary canal as by interrupting the gill respiration. Great numbers of illustrations might be given from the lower classes of the animal kingdom, in which the entire process of respiration is carried on by the mucous lining of the alimentary canal. Why, then, should not man also be able to receive a very appreciable and efficient amount of ogygen through this channel?

But I am able to present something more than theoretical considerations for believing that the oxygen administered in this manner is absorbed. I have frequently asked patients to whom the gas has been administered to observe carefully respecting the possible escape of the gas as flatus or in eructations, and have often been assured that no such escape occurs, although usually there is an escape of flatus within two to four hours after the treatment is administered, often soon after unless the patient is instructed to restrain the tendency to the escape of gas. I am collecting specimens of gas at different intervals after administration, for the purpose of determining the length of time it must be retained to enable complete absorption or interchange to take place.

To make assurance doubly sure, I made the following experiment upon a guinea pig on July 20, 1887:—

After placing the animal under chloroform, the abdomen was opened, and the intestines drawn out and spread out in such a way that the dark portal veins were in full view. A quantity of gas was then injected into the rectum, and to my great satisfaction I found that the dark venous blood assumed a bright red hue almost equal to that of arterial blood within less than one minute after the injection of the gas, showing the rapidity with which the absorption of the oxygen takes place. To confirm the result, I allowed the oxygen to escape from the bowels, afterward replacing it, and repeating the experiment several times. In each instance the color of the blood in the mesenteric veins assumed its ordinary dark purple color immediately after the oxygen was withdrawn, while the bright color returned almost instantly when the new supply of oxygen was introduced.

The processes of digestion and excretion are chiefly those of oxidation and hydration, considered from a chemical standpoint. Dujardin-Beaumetz has shown that the use of oxygenated water materially aids digestion. By introducing pure oxygen gas directly into the intestinal canal, digestion may be materially aided, especially in cases in which the intestinal portion of the digestive apparatus is the part chiefly at fault.

It seems to me to be entirely probable that oxygen enemata may be advantageously employed in quite a variety of cases. I believe that it may be advantageously used in all cases in which there is such a disturbance of the normal interchange of gases in the lungs as deprives the system of its proper amount of oxygen. The mucous membrane of the intestines presents an absorbing surface, very small, it is true, when compared with the amount of surface presented to the air in the lungs, and yet it is sufficiently great to allow of the introduction into the system of a large amount of oxygen in addition to that which can be gotten in through the lungs; and this additional quantity, though small when compared with the total amount received by the lungs, may be of sufficient value to the system to be of immense advantage to it, especially on account of its introduction at this particular point in the circulation. The notable functional disturbances of the stomach which accompany various pulmonary disorders, such as emphysema, chronic bronchial catarrh, chronic pleurisy, pneumo-

thorax, etc., suggest a very important relation between the digestive function and the quantity of oxygen received through the lungs. The same relation is also suggested by the frequency with which dyspepsia occurs among sedentary persons who are habitually air-starved.

The administration of oxygen by enema should prove especially serviceable both in functional and organic diseases of the liver. If we accept the views of Dr. Fothergill and others respecting the relation of the liver to the excretory work of the kidneys, it being held that the liver aids in some way in the conversion of uric acid and allied compounds into urea, it is at once apparent that the introduction of a large amount of oxygen into the portal vein ought to be of service to a feeble, overworked, or disabled liver.

We should expect, also, that this remedy would prove serviceable in cases of disturbance of the glycogenic functions of the liver. We should expect also that a cirrhotic or fatty liver would, by the conversion of the venous blood of the portal vein into arterial blood, be better able to do its work than with its ordinary blood supply, which is perhaps the poorest in oxygen of any in the body. I do not forget, of course, that the liver receives a part of this blood from the hepatic artery; but this is a comparatively small part of the total amount received by this enormous and wonderfully active glandular structure, and experiment has shown that the liver may continue its work after entire suppression by ligature of its arterial blood supply.

The following cases showing the influence of oxygen enemata upon the urine seem to support the above views in a most striking manner:

Case 1.—W. P., a man æt. 28, the first case in which the oxygen enemata were employed. A case of chronic lithiasis. The exact amount of uric acid present in the urine at the beginning of the treatment was not determined, but there was the most abundant deposit of urates and uric acid I have ever observed. The deposit disappeared within two days after beginning treatment, and a careful quantitive analysis for uric acid made August 4, six weeks after beginning the treatment, showed the amount present to be only .29 grams, considerably less than the amount ordinarily found in healthy urine. This case had stubbornly resisted all other remedies, dietetic and medicinal, for several weeks before the oxygen enemata were employed.

Case 2.—A lady, æt. about 50, rheumatic, and a marked subject of lithiasis. Urine showed a heavy deposit of uric acid and urates. Analysis showed the amount of uric acid present as follows:

Before taking Treatment.—July 29, 1.37 grams; August 1, 1.30 grams; August 2, 1.84 grams.

After beginning Treatment.—August 3, .71 grams; August 8, .64 grams; August 10, .64 grams; August 14, .22 grams.

The normal amount of uric acid is placed by most authorities at less than .5 grams in twenty-four hours. It thus appears that in the second case the amount of uric acid which was at first more than three times the normal amount was diminished more than one-half the first twenty-four hours, and was in a few days reduced to less than one-half the ordinary amount.

Case 3.—A lady, about 50 years of age, who, had been reduced very low by a digestive disorder which threatened her life. For several months she had been subject to frequent attacks of bilious vomiting, sometimes continuing for several days. The vomit was sometimes grass-green, at other times black and ill-smelling. The dejections were of the same character. The patient suffered almost constantly from a most depressing nausea, even when no food was taken for days together. For weeks the only food retained was peptonized beef taken per rectum. There was a steady decline in strength and flesh until the patient was reduced to a skeleton, and was so weak that she could scarcely raise her head from the pillow. Every remedy was tried that offered any hope of relief, medicinal, non-medicinal, and dietetic, but with little relief, and that only very partial and temporary so that her friends and myself as well were about ready to give up in dispair. At this crisis, it was determined to make a trial of the oxygen enemata, notwithstanding the feeble condition of the patient, which added somewhat to the difficulty of administering the treatment. As a result, most marked improvement began at once. The nausea disappeared, digestion improved, vomiting decreased, the patient began to gain in flesh, the stomach regained the power of digestion, and in a few weeks the patient was able to return to her home restored to health. At last accounts, within a few days of this writing, she was still doing well, gaining daily in flesh and strength.

Case 4.—A young man, about 30 years of age, suffering from acute rheumatism. The attack was a very severe one, and the urine was loaded with uric acid and urates. Oxygen enemata were begun on the fifth day of his sickness, when the disease was at its height, and with rest in bed, regulation of diet, simple tepid sponging, and sweating baths, were practically the sole treatment employed. The marked improvement after the use of oxygen was begun is evident from the following reports of analysis of urine:

April 2. Before beginning oxygen enemata. Quantity, 3300 cc. sp. gr.; 1028. Urea, 15.5 grams. Very heavy deposit of urates and uric acid.

April 10. Quantity 930 cc. sp. gr., 1025; urea, 37 grms. Slight, fleecy deposit of urates.

April 11. Quantity 900 cc. sp. gr., 1020; urea 39 grms. No deposit.

April 24.—The urine has become alkaline, with a slight deposit of phosphates.

Analyses of urine were made nearly every day between the first and last of the above dates. The results showed, as indicated above, a steady diminution in the amount of uric acid and a corresponding increase in urea, which was so marked as to indicate an unmistakable influence from the oxygen enemata in bringing about the favorable results.

Case 5.—Mr. H., a diabetic patient. Came to the Sanitarium for treatment on April 1, 1888. A quantitative analysis of the urine made April 2 showed 256 grms. of sugar. In less than a week this was reduced by a diabetic diet consisting of milk, eggs, gluten, cream, and non-farinaceous vegetables, to 152 grms, the amount reported by his home physician while the patient was subsisting upon a diet of meat, eggs and bran bread. At this time, the oxygen enemata were begun, two litres being administered daily. On May 2, after three weeks' treatment, the amount of sugar had been reduced to 3.1 grms. The patient has had no medicinal treatment whatever, and his diet has never at any time since coming under my care been wholly free from starch. The following table of analyses for sugar shows the gradual diminution in the quantity of sugar after begining the oxygen enemata:

April 5, 147.2 grms.; April 9, 80 grms.; April 15, 73.6 grms.; April 21, 44.8 grms.; April 27, 25.6 grms.; May 20, 3.2 grms.

Certainly the remarkable decrease in the daily amount of sugar passed in the urine must be attributed to some efficient cause, and the only one to which any such result could be reasonably attributed was the oxygen enemata, as the patient had previously been kept for months upon a strictly diabetic diet, without any favorable result. Future experience, however, must determine whether the results obtained are anything more than temporary.

Case 6.—A man of 28 years, suffering from Bright's disease of the kidneys—chronic parenchymatous nephritis—passing large quantities of albumen daily, and abundance of casts. Examination of urine made before beginning the treatment showed six grams of albumen, and smooth and granular casts, pus, uric acid, and urates. Quantity 1100 cc. sp. gr., 1015. Urea, 24 grms. After six weeks treatment with oxygen enemata, the amount of albumen present was found to be less, casts and pus less abundant. Quantity, 1490 cc., sp. gr. 1017. Urea, 37.25 grms., no urates nor uric acid.

Numerous other cases might be added to this list, but the above are sufficient to show what can be done in a variety of cases in which, upon theoretical grounds, we should expect benefit from the administration of oxygen in this manner, if it is a really efficient therapeutic agent. I trust the results shown are at any rate sufficiently striking to call the attention of the profession to the value of oxygen as a remedial agent, when administered in the manner described in this paper.

Oxygen enemata may be administered by means of the apparatus used in administering sulphuretted hydrogen; but it may be much more accurately used by means of an apparatus described by the writer in a paper entitled "A New Form of Apparatus for Administering Gaseous Enemata," read before this Section one year ago. The treatment may also be given much more conveniently with this apparatus.

GRADUAL DILATATION OF ŒSOPHAGEAL STRICTURES.

Read in the Section on Surgery, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY T. D. DAVIS, A.M., M.D.,

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Obviously there is no more serious lesion than closure of the only passage leading to the stomach. Fortunately nature has guarded the œsophagus so that its freedom from disease is noteworthy, and its most frequent lesions are the result of external causes, neoplasms, or due to diseases of contiguous tissues. So rare and surely fatal have strictures of this passage been that until within recent years but little has been done in attempting permanent relief. The gravity and urgency of the symptoms have possibly prompted equally grave and heroic remedies, such as divulsion, cutting, gastrotomy, etc., until now it seems needful to call attention to more conservative methods of treatment. In striving for the brilliant, possibly the safer and more simple plans have been neglected.

Neoplasms of the passage itself, or of adjacent structures, may cause stenosis, but I wish now to consider only cicatricial strictures of the œsophagus. These are produced by any cause that will destroy its coats. When either its mucous or submucous coat is destroyed, the resulting cicatrix is composed of smooth, hard, imperfectly organized tissue, that projects in ridges, or causes the adjacent mucous membrane to be puckered up into folds. If the continuity of the deeper tissues be also destroyed and the muscular coat invaded, the resulting cicatrix is very firm and callous, and the symmetry of the passage much contorted. Not only may the scar itself thus cause stenosis, but by its derangement of the circulation a secondary hypertrophy of the mucous membrane may result.

Direct violence has been known to cause such destruction of these tissues—such as injuries by sword juggling; swallowing foreign substances, as bones, coin, artificial teeth, or the too violent efforts to remove them. Syphilis, too, has in recent times been supposed to cause ulcers of the œsophagus, and it is not entirely free from the non-specific round ulcer. By far the most common

cause of such destruction of tissue and its resulting cicatricial stricture is the swallowing of caustic substances. The comparatively recent introduction of powerful caustics into domestic use has alarmingly increased the number of these cases. Dr. Campbell has reported to this Association[1] no less than twenty accidents from swallowing "concentrated lye," occurring in his immediate neighborhood, and from my own experience I should judge the number throughout our country, if known, would prove appalling. In the last ten years six deaths from swallowing concentrated lye have been reported to the Board of Health of Pittsburg. But these are only those who died from the immediate effect of the caustic, and by no means represent all who have perished from this substance, because those who died from the later effects would be reported, even if the primary cause was known, as dying from inannition, marasmus, etc.

It has been my fortune to meet a number of these accidents, and the success of my treatment has led me to present the subject for your consideration to-day. I can possibly best do so by presenting the cases in detail, for brevity omitting minor points.

Case 1.—In April, 1880, Henry C., aged 4 years, had been playing in the yard and came crying into the house with his mouth bleeding, leading the nurse to suppose that he had fallen out of his swing. He vomited and slavered thick saliva, tinged with blood, for several hours. On seeing him four hours after the accident he presented no appearance of shock nor any febrile reaction. His mouth was fiery red, leading a physician who had been called in before I could see him to suspect diphtheria. There was no sign of excoriations of tongue or fauces, but his mouth looked more as if he had been chewing nettles or some non-corrosive irritant. Oil and demulcents were freely given and by this time they were well retained. On the following day evidences of corrosive action were quite manifest, especially in the center of his tongue, but not at all in the fauces. From information afterward received, I have no doubt that he swallowed a solution of concentrated lye from an old empty can that had been carelessly thrown in the yard.

As his mouth rapidly healed, and he showed no further stomach trouble nor constitutional effects, I unfortunately concluded that he had escaped swallowing any of it, or if he had, that it was so weak as to do no harm. In five weeks I was called to see him again, when I was informed that he was having repeated attacks of vomiting, soon rejecting the small quantity of food he took, together with an immense quantity of slimy mucus. He had lost considerable flesh, and his face presented the haggard, anxious look of craving hunger. An œsophageal stricture was immediately diagnosed, and, with the assistance of Dr. W. R. Hamilton, a No. 2 flexible catheter was with great difficulty passed through to the stomach. The difficulty was caused, first, by the great dilatation of the œsophagus that had taken place above the stricture, making it extremely hard to find the natural passage and avoid making a false opening through the attenuated walls; and, secondly, the size of the stricture itself, which grasped firmly the small catheter. These difficulties, together with the struggles of the child, made the operation one of considerable delicacy and caution and rendered the prognosis, by every physician who saw him, extremely grave.

Immediately after passing the catheter, the child would be able to swallow a few spoonsful of milk, but in a few hours the tenacious mucus would again accumulate and occlude the passage. In a short time the child realized the relief afforded by the dilatation and waited rather anxiously for the operation, often bringing me the tube to insert. In order not to hurt him, that I might retain his co-operation, I increased the size of the tubes very slowly, and thus stumbled almost on a very satisfactory plan of treatment—that of *very gradual dilatation*.

In six weeks, by thus carefully, regularly and surely dilating, without pain and with but little inconvenience, the opening had reached a size that I felt safe to allow the parents to use the bougies themselves. I increased them gradually, and by five months we were using a No. 2 rectal bougie, which I considered about the normal caliber of the œsophagus of a child of that age, although the relative diameter and length of the œsophagus of children I have nowhere found estimated or recorded.

This case has ever since been under my observation. For the first few years the bougies had to be inserted every few weeks. If he failed to masticate his food thoroughly it gave rise to retching. During the last year the tube has been inserted but a few times, and the marked symptoms of the stricture have disappeared.

Case 2.—In June, 1881, Bessie W., aged 30 months, drank some water out of a can half full of concentrated lye, which had been carelessly let stand in a neighbor's yard. I saw her a few moments after the accident, and immediately gave her half a tumbler of vinegar, which she drank eagerly, although it was at once rejected by the stomach. Her tongue, cheeks and fauces were completely whitened, and she was screaming with pain. She was bleeding freely from the mouth. Thickened mucus drivelled out in streams, and every few moments she would attempt to vomit. I followed the vinegar with table oil, and as it was rejected gave quantities of milk. She was pale and cold, and the manifestations of shock quite marked. She reacted speedily and in a few days the deeply burned portions of her mouth were

[1] "Journal of American Medical Association," October 27, 1883.

more clearly outlined. So deep was that in the center of her tongue that it was fully three weeks in healing.

Knowing beyond doubt that she had swallowed considerable of the liquid fire, at the end of the first week I introduced the largest size English flexible catheter to the stomach. It caused comparatively little distress, but was tinged with blood on its withdrawal. After a few days I introduced it again, and so every alternate day. But soon it caused too much pain and evident irritation, so I was forced gradually to decrease the size until in a month only the smallest sizes could be used with freedom from pain. At this time the child lived on milk alone and was well nourished. The œsophagus had two marked strictures, one opposite the cricoid cartilage, where it is normally constricted, and a still more tense one opposite the middle of the sternum. Neither of these were simple annular strictures, for on removing the bougie it always presented a spiral form, the result of its moulding in the passage. I had succeeded in again dilating the passage considerably, when the child unfortunately picked up a grape seed from the floor and swallowed it. The seed passed the first stricture, but became wedged in the lower one. It seemed impossible to move or pass it. Prof. James McCann saw the case with me at this critical stage, and succeeded in passing a small whalebone fillet, but joined with me in the gravest prognosis. I nourished the child by enemata for five days, when at last I succeeded in forcing the seed through.

For several weeks after, the progress of the case was quite satisfactory. During the third month I invited Dr. Hamilton, who had seen the first case, with me to visit this child. He readily passed a number eight catheter, but against my best judgment, also passed Nos. 9 and 10, insisting that it would do no harm and that I was going too slow. The largest bougie caused much pain and was slightly tinged with blood, the first I had seen since the original burn was healed. The next day she had greatly increased difficulty in swallowing, with some feverish symptoms. I was compelled to use a much smaller instrument, and on the fourth day found the catheter welling up full of pus. The too rapid dilatation had caused an abscess. For a number of days I passed no instrument, but nourished her entirely by enemata.

On resuming dilatation the progress of the case was slow but satisfactory up until a rectal bougie could be introduced easily, which was about six months from the beginning of treatment. This case is also under my observation and now, after seven years, is entirely free from any difficulty in swallowing, although the caliber of the passage is certainly less than normal. One cause of this perfect success, I believe to be, that the early treatment kept any dilatation from occurring or any cul-de-sac being formed above the stricture.

Case 3.—Ethel R., aged 20 months, in June, 1885, drank a solution of concentrated lye, which had been prepared for scrubbing purposes. For five weeks she was under the care of a homeopathist. Her mouth was quite badly burned, but it healed in two weeks. When I first saw her she was the picture of distress, the emaciated body, hollow cheeks, gaunt, famished expression and sunken eyes, all told the unmistakable story of starvation, and yet her homeopathic physician had assured her parents that she was over all effects of the lye, but was now simply suffering from worms! On examination a stricture was found near the stomach. The dilatation of the œsophagus above the stricture was sufficient to hold a teacupful of food and retain it for an hour. With much patience and no little difficulty the opening was found, and day by day the gradual dilatation was kept up, as in the previous cases, and in six months resulted in complete recovery. This case differed from the others in presenting undoubted evidence of ulcers in the stomach, which however healed in due time, and now, after three years, she is enjoying good health, but like the first case is easily choked.

Beside these cases, I have attended two children whose mouths were badly burned with lye, but who fortunately did not swallow any. In addition, I have the names of four more who perished from the immediate effects, and two the results of which I do not know. This makes ten deaths, five recoveries and two unknown, or seventeen in all from concentrated lye in this city alone, beside the many unreported.[2]

In dilating these strictures I used the common English catheter straightened out, and mostly without their wires. Œsophageal bougies for children are not on the market, and, at any rate, increase too rapidly in size for gradual dilatation, beside the catheter, always easily attained, has the advantage of enabling you to introduce food into the stomach. On introducing these catheters the head is held as far back as it will go. The bougie is well oiled with butter, on account of its leaving no unpleasant taste. The instrument held lightly between the thumb and first two fingers is then slipped past the base of the tongue well against the posterior wall, in order to escape the epiglottis. With a slight rotary motion it is passed quickly to the stomach, where it is allowed to remain during two or three respirations. There is much less danger of exciting cough or retching if the finger or tongue depressor is kept out of the mouth. The lower two-thirds of the œsophagus being a very insensitive passage tolerates the instrument readily, and causes but little distress if held well back from the epiglottis.

[2] Since presenting this paper the daily press of this city has recorded the deaths of four more victims from swallowing concentrated lye, and there is still a fifth case now under treatment in my immediate neighborhood.

From a study of these cases I am well satisfied that: 1. Too much weight has been given to spasmodic stricture of the œsophagus by Michel, Campbell, Smith and others; that involuntary muscles can even have tonic spasms at all is a question, but to hold with Campbell that such a spasm can continue for eight days, calls for a stretch of the imagination beyond my power. At no time did I have any evidence of spasmodic stricture in these cases. Any difficulty in introducing the dilators was due solely to causes mentioned. The relief given by passing the bougie is readily explained, not by its overcoming spasm, but by its removing the tenacious mucus or some article of food that had clogged the passage or lodged on the shelf of the stricture.

2. The advantage of the early introduction of the bougie to prevent dilatation of the œsophagus above the stricture is clearly manifested by the history of these cases.

3. The second case certainly contrasts the rapid and gradual plans of treatment, to the great if not vital advantage of the latter. To "make haste slowly" is the only safe rule. The gradual being almost painless and giving great relief secures the co-operation of the patient. It avoids too great irritation and danger of inflammation or rupture, all of which are likely to follow rapid dilatation.

4. Are not these seventeen accidents enough to second Dr. Campbell's proposition, that some legal restriction should be placed upon the sale of this intensely dangerous substance.

5. Finally, I shall watch with interest to see if any of these cicatrices shall develop malignant disease.

Dr. Wm. H. Pancoast, of Philadelphia, asked what form of bougie Dr. Davis had used and whether he had ever tried the olive-pointed or the rat-tail bougie.

Dr. Davis replied that he used only the common English catheter, which he considered the best adapted to the treatment of children, in whom this accident was most common.

Dr. I. N. Quimby, of New Jersey: I can endorse what Dr. Davis has said in regard to gradual dilatation of œsophageal strictures. I accept the principle also, as it applies to the dilatation of urethral and other strictures. I have seen very much harm done by too rapid dilatation, which seems to lacerate, and instead of overcoming seems to rather retard and perhaps make the stricture more firm. This probably indicates that we should go slowly. In a case which came under my observation, I took a little rubber bougie, or rather rubber tube, introduced it and then inflated it with a small syringe, thus producing a gradual dilatation, until a little discomfort was complained of by the patient, but never enough to cause pain.

Dr. Pancoast: There are one or two additional important features of the paper, one of which is that just referred to by Dr. Quimby, and which, I am happy to say, expressed most happily my views on this subject. I refer to the fact that all mucus passages of the body should be treated by slow and very gradual dilatation. It is the most efficacious method of treatment. In this connection I have a manœuvre which I might mention to you. I have a spontaneous dilatation, by hydraulic pressure, it is true, which I secure in each case by directing the patient every time he passes urine to catch the urethra and hold it until the stricture is dilated to a slight degree by the urine in its effort to escape. I do not use the urethrotome until it is settled that no further dilatation can be carried on by other means.

The "rat-tail" and filiform bougies of French make are of great service. I have also used the hydraulic dilatation spoken of by Dr. Quimby, with success.

The worst cases of œsophageal stricture that I have ever had were, one from lye, one from cancer, and one from sulphuric acid. The patients recognize very promptly the benefit which is derived from this gradual method of dilatation. I heartily endorse the suggestion that the members of the American Medical Association be requested to report, at the next annual meeting, all the cases they have observed of stricture of the œsophagus from concentrated lye.

Another point to which I desire to refer is the fact that muscular spasmodic stricture of the œsophagus does unquestionably occur. We can easily understand how this is likely to occur if we refer to the anatomical relations of the œsophagus as it passes through the diaphragm. In the diaphragm there are three openings, the first of them for the passage of the aorta, and the most posterior and right behind that of the œsophagus, is an osseo-aponeurotic opening. The second opening is for the vena cava, and is a tendinous opening, as it is right at the junction of the central and middle leaflets of the central tendon. It is surrounded on all sides by tendonous structure. The third opening, however, is right through the muscular substance of the diaphragm. It is eliptical in form and is intended to transmit the œsophagus, It is intended to act like a sphincter upon the œsophagus. Too sudden swallowing, as we have doubtless all learned from our own experience, is followed by a closure of this portion of the œsophagus and momentary retention of the food in that passage.

Dr. Davis: I merely want to call attention to the fact that all the cases reported in my paper were under 5 years of age, and that for this reason no complicated apparatus could be employed.

Second, with regard to the olive pointed bougie: My idea in the treatment of these cases was continued pressure. The olive point dilates while passing through, but you do not keep up the pressure by it. Having the same diameter through-

out, the catheter makes constant and even pressure, no matter to what extent it is inserted. Again, in speaking of spasm of the œsophagus, I said "tonic" spasm. I claim there is no such thing as a tonic spasm, like that lasting eight days. Of course I recognize spasmodic constriction.

DR. PANCOAST: I think that the Doctor will recollect that the great value of the filliform bougie, the great value of the bougie with olive tip, that the great value of the rat-tailed bougie is the fineness of the tip and the fact that the largest calibre of the instrument being higher up, keeps the fine point of the instrument more directly in the centre of the passage—and that is the chief value of it. My friend should also remember the difficulty experienced by many in swallowing pills, as is so often expressed by the patients.

DR. I. N. QUIMBY supported Dr. Davis' view in regard to tonic spasm of the œsophagus. He did not see how such constriction could be possible.

ELECTROLYSIS IN THE REMOVAL OF NASAL AND PHARYNGEAL NEOPLASMS.

Read in the Section on Surgery at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY D. S. CAMPBELL, M.D.,
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The therapeutic value of the galvanic current in urethral hypertrophic catarrh, fibromata and mucoid growths of the uterus, etc., has been presented with considerable force of late by various writers, but more notably by Apostoli, of Paris.

He has clearly demonstrated from clinical evidence that this "not strictly surgical nor strictly medical" form of treatment has special advantages over others in the treatment of fibroid and mucous growths of uterus. In his narrations he claims to have suppressed the miseries constituting the fibroidal symptomatology to the enormous per cent. of 95, by either a sensible reduction or complete absorption of the growths. And though his remarkable successes—aided, perhaps, by the subtle manifestations of its properties—may have given color to his reports, I am fully persuaded, after a careful manipulation of this particular form of chemical force in a large number of cases suffering principally from nasal and pharyngeal neoplasms, that its therapeutic value is worthy of consideration.

But, in dealing with this apparently hidden form of treatment, I regret exceedingly that I can on this occasion but briefly allude to the manner in which material changes take place in tumor structures, as the question of greatest interest to practitioners is centred in the purely clinical and practical results of its use.

Practical experience has shown that the conductivity of tissues offers a fair transmission of electrical fluid, and that the material changes which this fluid produces at the polar points of attraction is simply an electrolytical decomposition. The principle of this metabolism is based on the theory that, as the proteid is the essential material substratum of all animal organisms; and being first made active in the vegetable compound, before its conversion into animal tissues, by the action of heat and light—the source of all energy—on elementary substances, this same constructive organic property can be set free, though now a storehouse of active regenerative energy, by the agency of the same elements which gave it birth in the organic kingdom.

But a more definite chain of analytical evidence is necessary, before a rational conception of the destructive materialistic changes is made easy.

As energy (latent) is the product of activity, and whether in this instance it is stored up by vital or chemical influence, or both, its latent power can be set free by the action of these same potent elements. But this action is purely a source of heat, which is constantly expended, both in the transformation of lifeless pabulum in the construction of living tissues, and in their natural destruction. But that which we call organized pabulum is the material deposit which had its birth and growth, and after it spent its usefulness, goes on to the period of decay. The energy displayed in its organization is principally dependent on vital force; but in its decomposition it is entirely dependent on chemical action.

Viewed in that light, chemical action—the principal force in nature—is the direct opponent of vital force, and consequently the chief physical annoyance organized bodies encounter; for no sooner has cell life begun, whether it has reached the period of its existence or not, than it is acted upon by this indomitable foe. Manifestations of this are discernible in various diseases, but more notably in diabetes, where a laxity of nervous energy is plainly observed.

From this process of reasoning we are entitled to assume that any interference with the process of regular vital motion interrupts cell proliferation; and that unless its functional activity is protected and prolonged by a continuous stimuli of nervous energy, or vital force, its existence is cut off by the execution of chemical laws.

Now, as electrolytical action is the result of chemical decomposition—in a galvanic cell—its influence must necessarily be destructive to cell life; that is, if applied to any prominent degree of stimulation, negatively speaking; for practical experience has shown that the negative electrode induces a transportation of watery fluid toward it, which must eventually disturb the conditions favorable to the process of segmentation. Recognizing this fact in the normally robust segmentation and cell proliferation, can we not discern the

important influence which this chemical resultant has upon the cell processes of lower vitality, viz.: tumor structures in general, which are dependent merely on the reflected influence of vital energy for existence, as being destructive to their abnormal nature? Indeed, the application of the galvanic current on various neoplastic growths of an erectile character, and other structural abnormalities affecting the nasal and pharyngeal regions, as well as in one instance of tumor stricture of œsophagus, has convinced me that its therapeutic properties are above reproach. Clinical evidence in other departments of medical science is not wanting in combating this assertion. But though we are never sure, even of established principles, especially in a science which is being constantly attested, as in the science of therapeutics, we are entitled to accept the latest of the previously established doctrines as the soundest, until a better one is procured. So in the present teachings of electrolysis, the display which chemical decomposition produces on low structure in general may not be recognized by some. But very often such differences are the result of a too hasty formation of opinion on a new article of treatment, or too much conservatism, or centralization of preëstablished opinions, based on the ground that they are either too impatient in determining the actual merits of an agent in advance of their time, or are above-board in attesting anything they have not already learned. However, the mode of the electrical current may not be clearly defined; but that it facilitates the absorption of interstitial deposits of lymphatic cells, is as clearly discernible as are the results of its influence on tumor structures, to me. Clinically speaking, the patient is the living exhibition of its therapeutic or surgical value. And though the regression of the growths is not as plainly observed during active treatment as after it is entirely suspended, is convincing proof of its enduring qualities.

As a clinical illustration of the actual merits of the galvanic current, based on a series of careful manipulations, let us take a typical case of fibroid growth of either the nasal or pharyngeal regions, and observingly study from day to day the effects it has upon it; that is, until from eight to fifteen applications are given of a current intensified to suit the wants of the manipulator. Beginning first with a ten minutes current application, to be increased to twenty after the eighth, an immediate congestion ensues, continuing for about twenty-four hours, and which exudes from its surface a watery secretion. Following this non-inflammatory phenomenon, a glazed and rather shrivelled appearance of the tumor is observed, but with no apparent reduction. Repetitions of this treatment, including up to the sixth, and in some instances as high as the twelfth, do not seem to change the appearance, nor alter the size of the growth. But when the proper intensification becomes bearable, distinct and effectual changes are noticed. But whether it is owing to the preparatory measures of the feebler that the destructive influence of the higher current is due, I am at a loss to say. Yet, judging from the similarity of their respective dispositions, cannot but grant some value to the former, though the display of the latter is most prominent, showing visible regressive changes after each regular intensified dose. The appearance of the growth, shortly after the first sensible current introduction, showed signs of a general disintegration of the cell processes, with diminution, which increased on every application afterwards, until a complete dissolution or death of the structure occurred.

This brief description of the effects of the galvanic current on a simple fibroid naturally suggests to the inquirer the probable number of treatments necessary to its disposal; also the relative number of different pathological formations I have operated on, so as to determine on what plane of experience this novel form of treatment is to be placed.

My experience thus far has been that, as growths vary as to their natural vitality and composition, as is observed in the malignant cell variety, in comparison with the benign, the number and quality of doses will invariably vary correspondingly. Those of slow formation have greater resisting power than the cells of rapid growth; and as abnormal structures of fibroid character possess in no small degree the tenacity of the natural fibrous tissue cell—both consisting of a homogeneous mass of wavy interlacing fibres of ultimate strength and vitality—it is reasonable to suppose that a greater intensification of electrical fluid is required to disturb their functional capacity, than those constituting the myxomata, myomata, papillomata, adenomata, etc., though their conductivity may be equal. Hence the difficulty in approximating a uniform system of quantitative treatments. However, by dividing the number of applications by the number of cases operated on, we may find the average number of doses. But they do not show any relative value; for, in one instance I have in mind, a small, dense fibroid growth of vault of pharynx, over forty applications of a highly intensified current had been given before a sensible reduction of the growth occurred; whereas a feebler current on several pharyngeal fungosities did not require, on an average, more than six.

The field of observation from which I have gleaned these facts, of the powers which this natural force wields in the decomposition and also absorption of tumor structures, may not cover a sufficient number of specified cases to warrant its general adoption, but, as a matter of preference in forty-five tabulated cases, viz.: twelve myxo-fibromata of nares, five laryngeal fibroids, eighteen cases of adenoid vegetations of posterior nasal and

pharyngeal surfaces, three angiomatis and seven cases of papillary growths variously situated, but principally on sides and base of tongue and palatine arches, am fully justified in endorsing it, as an instrument in the hands of the educated of rare value; as an agent which is better adapted to suit the wants of the occasion than any surgical device at present known. Indeed, all things being considered, where a growth cannot be properly extirpated by either the crushing or cutting process without injuring important structures; or when a surgical procedure would be highly proper, but cannot be performed without doing violence to other parts, as, for instance, where the tumor is situated behind the posterior surfaces of the turbinated bodies, or in vascular growths occupying any portion of the nasal tracts where any procedure except pressure is of account—not excepting actual cauterization—nothing can accomplish so handily or so safely the removal of these growths, as the galvanic current.

HEPATIC ABSCESS; TWO CASES.

Read before the Medical Society of the District of Columbia, March 14, 1888.

BY C. V. BOARMAN, M.D.,
OF WASHINGTON, D. C.

F. W., married, aged 34 years, white, a fisherman by occupation, was seized with quite a severe attack of pneumonia, March 16th, 1887; he was sick a week or ten days when he began apparently to convalesce, and became so much better that he left the city and went down the river to one of the fishing shores of which he had charge. He remained there possibly a week or ten days, exposed to inclement weather and constant wading in the river. Whilst pursuing his occupation he was again seized with intense pain in his right side, accompanied with cough and difficult breathing; owing to the pain and great debility he returned to his home and endeavored to treat himself, not sending for me until April 27, when I found him suffering with a well marked case of pneumonia, involving the middle and lower lobes of the right lung. In a few days the pain partially disappeared, and Mr. W. appeared to be much better and left his room and came down stairs. A few days after the pain returned, of a sharp, lancinating character, accompanied with cough, rusty sputa, accelerated breathing, and high temperature.

This state of affairs went on from day to day, the pain remaining and frequently becoming unbearable; the sputa changed and became bright red in appearance, which was the case for several weeks, when he was seized with several active hæmorrhages, but prior to this his temperature fell, and I failed to use the thermometer afterwards. About May 10 he was seized with a most severe pain in the epigastrium, shooting from the right hypochondriac region across to the left, tenderness on pressure, and a slight bulging of the parts just below the ensiform cartilage, very sensitive and hard to the touch.

He remained in this condition up to June 1st, constantly spitting blood, which appeared to give him some relief from pain, as when it would diminish or be checked by treatment the pain would become unbearable, until the hæmorrhage recurred.

About June 1st the pain became more intense, causing the man to writhe and scream out; it was located immediately over the epigastric region; the sputa became darker and mixed with pus of an intolerable fœtid odor; bowels were regular and natural in color throughout his entire illness, emaciation great, breathing quick and difficult; countenance anxious and indicative of great suffering, with little or no sleep, as the most powerful narcotics had but little effect, either in relieving pain or producing sleep, although I administered morphia in half grain doses repeatedly, both by mouth and hypodermically.

I have never, in all my professional life, seen such intense suffering. His screams could be heard on the front street at times, and continued without intermission day and night for over a week, medicine having no effect. I would not like to mention the amount and quantity of narcotics and anodynes I gave this man in various ways, for fear of being thought untruthful; but suffice it to say that I made use of every opening possible to introduce medicine into his system, to give relief; then I attacked the surface with blisters, and sprinkling morphia on the abraded surface, but without relief; everything failed until tired nature could stand it no longer, and sleep came to the sufferer, giving him temporary relief. I sustained the patient during his entire illness by administering large quantities of whisky, ammonia, and the various beef essences, together with milk, eggs, etc. He would frequently consume over a pint of whisky in one night, together with nourishment of various kinds.

The case was a most obscure one in every way to diagnosticate. I was satisfied that the lungs were seriously affected, and after a careful exploration of the chest, came to the conclusion that there was fibroid degeneration, he having had a severe attack of pneumonia.

Now in regard to the other difficulty, the intense pain and the slight bulging in the epigastric region, hard and tense to the touch, and exceedingly tender, there was a difference of opinion; I upon two or three occasions imagined I could feel fluctuation, but another physician examined it and failed to agree with me. Another hint in regard to this enlargement was, a hereditary predisposition to malignant disease of the stomach existed, the man's father, grandfather,

and other relations having died of cancer of the stomach.

In his case there existed very few symptoms of cancer, excepting the intense pain; besides, he was only 34 years of age, and did not present the peculiar cancerous hue of the skin, nor was he jaundiced.

I diagnosed the enlargement in the epigastrium as caused by the presence of an hepatic abscess, and even suggested the propriety of introducing an exploring needle into it, but was not allowed to do so.

The patient gradually grew worse from day to day. The emaciation and debility increasing, his appetite failed him, and his stomach began to rebel against the use of stimulants. About June 4th another peculiar symptom presented itself, and I was sent for in great haste, and must acknowledge that I was very much surprised upon my arrival; the man's face, neck and shoulders were puffed up out of all proportion to the rest of his body; his face was full and round, even his ears were enlarged; the arms and hands were very nearly as large again; severe paroxysms of pain would occur, and his face would then become very dark, which discoloration became permanent; his cheeks, nose, neck and ears were of a dark blue color, his extremities as cold as marble and bathed in a clammy sweat. Every symptom indicated immediate dissolution.

After the active use of stimulants and the application of heat to his extremities, and brisk rubbing, he rallied, but the swollen and discolored features remained. The swelling was emphysematous in character, and no doubt depended upon the escape of air from the broken down lung tissue.

These attacks of prostration would recur two or three times daily, but by administering stimulants, etc., he would rally, until at length he refused to take anything, nor would he allow anything to be done for him, stating that he wished to die, and that he would not suffer the torture of having his life prolonged.

He died June 10, 1887, at 10 A.M.

Post-mortem Examination.—I made the post-mortem examination at 5 P.M., June 10, assisted by Dr. James Fraser. Body pale, livid, discoloration of the dependent parts to a slight extent, rigor-mortis well marked, with no appearance of decomposition.

Upon making an incision into the abdominal walls I found but little adipose tissue; in the epigastric region, where the prominence existed, I found a large abscess of the liver, strongly adherent to the adjacent peritoneum and surrounding tissues; several smaller abscesses were dotted around the larger one. I had to rupture it to remove and elevate the liver. It was filled with a thick dark grumous substance (about a pint) and was located at the junction of the right and left lobes. After removing the liver I made a section of the right lobe and found another large abscess, not communicating with the above one. There were four abscesses in number, and numerous smaller ones around the larger ones.

My attention was drawn to the diaphragm by its peculiar bulging appearance just below the lower lobe of the right lung, and also the presence of several small abscesses scattered over the under surface. I made an incision into it and there was a perfect gush of fluid similar to that contained in the hepatic abscesses. After sponging out all of the above I examined the lung and found it entirely broken down and in a gangrenous condition, the odor being unbearable and the substance of the lung tissue dark and semi-fluid, similar to the sputa expectorated. I did not pursue my investigations any further, owing to the late hour and bad light.

Case 2.—A lady, aged 69, had been sick for three years. Prior to this time she was comparatively well, stout, and without the history of any transmitted disease. Three years ago she began to have attacks which led me to suppose them due to the passage of gall-stones. I had examined the evacuations carefully after each attack, but could never find any calculi. The attacks increased in frequency and severity. For the past two years she had been confined to her bed. Then she began to have daily rigors and fever, accompanied with vomiting and intense pain in the epigastrium. Lately she had had one or two attacks daily. She was jaundiced and there was bile in the urine. The stools were light colored. A month prior to death she stopped complaining of pain, but the vomiting continued daily until two days before death, when it ceased. She died March 7, 1888. The necropsy showed several abscesses in the liver.

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MEDICAL PROGRESS.

TREATMENT OF ANÆMIA IN CHILDREN.—DR. A. JACOBI says the medicinal treatment of anæmia must fulfil the causal indications first. That which depends upon chronic gastric catarrh requires, according to circumstances, alkalies or hydrochloric acid, pepsin, bismuth. Beside the well-known subcarbonate and subnitrate, the salicylate has made many friends of late, deservedly. Pepsin and dilute hydrochloric acid are best combined; a baby of a year may take six or eight drops of the latter in six or eight ounces of water daily, or the acid may be mixed with milk according to the formula given in a previous essay. Disease of the kidneys has its own indications. The regulation of the heart's action—which, when abnormal, is the most frequent cause of habitual epistaxis,

and of gastric catarrh and hepatic congestion—is the first indication in secondary anæmia. Many a gastric catarrh will not get well without digitalis or some other cardiac tonic, and persistent nose-bleeding is apt to improve immediately after the administration of digitalis, with or without iron. Thus, in a great many cases, anæmia is "cured by digitalis." In a similar manner digitalis can be utilized for the purpose of more competent oxygenization of the blood. When the heart is weak, and the lungs, by virtue of old pneumonic infiltrations, offer to great a resistance to an easy circulation in the pulmonary vessels, it is again digitalis (or its equivalents) which facilitates the extensive contact of the oxygen of the atmosphere with a larger number of blood-cells.

The insufficient innervation of the muscular tissue of the heart, stomach, and the rest, which is one of the most serious results of anæmia, is corrected very happily by strychnia or other preparations of nux. An infant a year old tolerates and requires one-fortieth of a grain of strychnia, or one-fifth of a minim of the fluid extract of nux, daily, for a long time in succession. These preparations may easily be combined with any other medicinal administrations.

Iron is looked upon as the sheet-anchor in anæmia. It is mostly indicated in cases of primary uncomplicated anæmia. A catarrhal stomach does not bear it well; when the stomach, however, is abnormal in consequence of the general anæmia, iron improves both the general condition and the stomach. In many of these cases the addition of bitter tonics is advisable; strychnia is perhaps preferable. Anæmia after malaria, dropsy from anæmia, and chronic nephritis, anæmia with neuralgia, anæmia with (and from) valvular diseases which do not result in local congestion,—mainly incompetency of the aortic valve,—are greatly benefited by iron. Anæmia after chronic diarrhœa requires great care in its use; in most cases it can, or ought to be, avoided. While it is very beneficial in the predisposition to hæmorrhage, it must be avoided in hæmoptisis. It is contraindicated in inflammatory fevers, for it increases pulse, arterial pressure and temperature. But in infectious fevers, such as erysipelas and diphtheria, it is very efficient. It requires good digestive powers, and, to combat anæmia only, no large doses. The total amount of iron introduced into the system in the daily food does not exceed much a single decigramme (one and one-half grains), and that contained in the blood of the adult has a total weight of three grams only. Still, it is quite possible that the iron introduced into the stomach fulfils more indications than that of supplying hæmoglobulin.

Of the preparations mostly in use, either officinal or otherwise, I have mostly employed dialyzed iron, a few minims several times daily, the tincture of the malate, twelve to thirty minims daily, and the same, or somewhat larger doses, of the tinct. ferr. acet. æth. and tinct. ferr. chlor. The dry preparations are the phosphate, one to two grains three times a day, and the same doses of the carbonate (saccharated). The latter is aptly combined with proper doses of bismuth. The syrup of the iodide of iron is well tolerated by the youngest infants; as many drops as the baby has months may be given three times a day up to eight or ten drops a dose. It is well tolerated by the stomach, in which the iodine is freed from the iron and acts as an antifermentative. Besides, experience appears to confirm the theoretical inference that it proves its power as an absorbent in cases of anæmia complicated with glandular enlargements. The syrup of the hypophosphites cum ferro of the Pharmacopœia may be given in larger doses; this is the preparation which I frequently select when I mean to add the fluid extract of nux vomica. It is self-understood that I prefer the legitimate preparations of the Pharmacopœia to the wares of the agents and advertisers, "physicians' samples" or no.

For subcutaneous administration the pyrophosphate of iron with citrate of sodium and the albuminated iron have been recommended. As anæmia is a chronic condition which requires "chronic" treatment, it is not very probable that this mode of employing the remedy is very available.

The administration of iron appears to have an indirect effect also, which is apt to do much good. As a rule, the inhalation of oxygen gas, continued for five or ten minutes, in intervals of from an hour to two hours, seems to improve sanguification and metamorphosis considerably. This wholesome action, it always seemed to me, was most perceptible while iron was administered. To admit oxygen red blood-corpuscles are required; it appears that the influence of iron on their organization and numbers renders the introduction of oxygen into the blood easier and more beneficial.

Some of the worst forms of anæmia are greatly benefited by arsenic. They are those which result from long-continued inanition and slow convalescence, in which the stomach does not suffer; from primary catarrh; from chronic malaria; from chronic tuberculosis of the lungs; from chronic glandular swellings of a malignant type, either lymphoma or sarcoma. In all of these forms it is highly useful. The doses need not be large, but may be increased slowly. One-hundredth of a grain of arsenious acid, or one drop, or one and a half of Fowler's solution, three times a day, after meals, the latter amply diluted, are well borne for weeks, even months, without interruption, by a child of four or five years. In malaria, the remedy may be given with quinia (and iron), in other forms with strychnia (and iron); in phthisis, with digitalis.

The gradual increase of the doses of arsenic

may be effected in the following manner: A drachm of Fowler's solution is diluted with sixty drachms of water; three doses of this mixture are given daily. If the initial dose be one drop, give a teaspoonful; the next dose is a teaspoonful + one drop, the third dose a teaspoonful + two drops, and so on, until the sixty-first dose consists of a teaspoonful and sixty drops. Thus the original dose is gently and slowly doubled in twenty days.

Children bear arsenic better than adults, and very much better than senile patients. Still, even they must not take it when they are affected with gastric disorders; nor continue it when in the course of treatment conjunctivitis, œdema of the eyelids and face, or diarrhœa make their appearance.—*Archives of Pediatrics*, July, 1888.

THE TONGUE AS A GUIDE TO DIAGNOSIS OF LESIONS OF INTRA-CRANIAL VESSELS.—Examination of the tongue is usually confined to the upper surface, little or no attention being given to the under surface. DR. GILLOT asserts that this portion of the tongue often presents certain points of diagnostic significance to reward the physician for his trouble in inspecting it. It is the condition of the superficial ranine vessels, especially, which is to be studied in this inspection. In a young and healthy person the veins alone are prominent beneath the mucous membrane, but with the advance of age, or as a result of disease, these veins become dilated, tortuous, or varicose, and the venules and capillaries become visible. In many cases little dilatations, like grains of sand, may be seen on the smaller vessels. These may be so minute as to be detected only with the aid of a lens, but are ordinarily readily visible to the naked eye as little projections the size of millet-seeds. They may be few and disseminated, or may be very numerous and grouped together like a bunch of grapes. They are ordinarily situated a short distance from the tip of the tongue, on either side of the median line, or near the root of the organ. Their color varies, according to their size and the condition of the general circulation, from a bright red to purple, or almost black.

These projections, Dr. Gillot states, are true miliary aneurisms caused by a thinning of the walls of the vessel, and are analogous to the miliary aneurisms occurring on the cerebral vessels. But more than this, they are diagnostic of this condition in the vessels of the brain, or at least should raise a grave suspicion of its existence. The circulation of the tongue has very close relations with that within the cranium, the same influences which act upon one acting also upon the other, and the inspection of the under surface of the tongue furnishes as valuable an indication of the state of the cerebral circulation as does an examination of the fundus of the eye, while it can be readily made without instruments and does not require of the physician any special training, as does the use of the ophthalmoscope.

The primary cause of these miliary aneurisms, of the tongue as well as of the brain, Dr. Gillot refers to the so-called arthritic diathesis, and he says that he has never seen these minute dilatations of the lingual vessels in any but those suffering from arthritism, a term used to denote the diathesis expressed by the manifestations of gout, rheumatism, gravel, cardiac affections, etc.

The author urges a careful inspection of the under surface of the tongue in the aged and in those presenting any lithæmic symptoms, and believes that the physician may, thereby, often derive much assistance in the diagnosis of disturbances of the cerebral circulation, and may also obtain very valuable indications for treatment, being often enabled to avert, or at least postpone, grave cerebral disorders by timely and judicious treatment.—*Medical Record*, Aug. 11, 1888.

PHYSIOLOGICAL EFFECTS OF RUSSIAN BATHS.—DR. NIKOLAI MAKOVETSKI, of Professor Manassein's clinic in St. Petersburg, has published as a graduation thesis an elaborate investigation made by him on the effect of the so-called Russian bath on nitrogenous metabolism, and on the assimilation of fat and the nitrogenous principles of food. His researches were carried out on four student friends in a condition of perfect health. The baths were given daily for five days; perspiration in a hot chamber was induced, with the usual amount of shampooing, no steam being used. Accurate analyses of the urine, etc., were made for five days before the baths, for the five days during which they lasted, and for two days subsequently. It was found that the assimilation of the nitrogenous parts of the food was diminished, the nitrogenous metabolism being increased. The loss by the lungs and skin was markedly increased, but the urine was diminished; the uric acid, too, was diminished during the days when the baths were given. The baths have the effect of strengthening the muscular and nervous systems, and of increasing secretion when there is much muscular work, especially where the food is deficient in nitrogen, when there is a large amount of nervous and mental activity, and also when there is deficient action of the secretory organs in consequence of preceding hypersecretion, or morbid conditions, such as chronic catarrh of the bronchi, stomach, intestines, or genito-urinary tract, chronic hepatic, renal, or splenic affections. In these cases, together with the baths fat and hydrocarbons are required in the food. As contra-indications, theory would lead us to include all conditions where the nitrogenous metabolism is diminished, and also those where artificially induced diminution of it appears to act prejudicially.—*Lancet*, July 28, 1888.

CATHETERIZATION OF THE URETERS IN MAN.—In the ordinary surgical treatment of disease of the kidneys it is almost impossible to be sure of the condition of both of the organs; direct catherism of the ureters alone allows of a correct conclusion. By the use of Nitze's cystoscope the orifices of the ureters may be brought into view, and catherism thereof permitted. IVERSEN relates the case of a man thirty-eight years of age, who came under his care with symptoms of pyelitis, but whether double or single could not be determined. The microscope showed constant presence of pus cells and, on one occasion, a hyaline cylinder. The patient was feverish, and notwithstanding general treatment, did not improve. The high operation after Guyon was performed, and by the help of electric light both ureters were catheterized. A clear fluid flowed at intervals from the right ureter, while from the left ureter there was a continuous stream of pus, with so much impetus that it was evidently under pressure. The urine was examined with the microscope. That from the right ureter exhibited blood globules, epithelial cells, and a few casts. The urine from the left kidney contained only pus. The operation was successful, the wound healed quickly, and the urine passed normally. The condition of the patient remained the same as before the operation, but having regard to the desquamative process in the right kidney, the operation of nephrotomy would have offered no advantage to the patient, and would have been attended with danger. Iversen records this case as illustrating the advantage of catheterism of the ureters, and as a warrant for its employment on any future occasion.—*Centralblatt für Chirurgie*, April 21, 1888.

PRIMARY ACTINOMYCOSIS OF THE BRAIN IN MAN.—PROFESSOR BOLLINGER relates the first recorded case of actinomycotic tumor of the brain. The patient, a woman aged twenty-six, had, in consequence of a bad state of her teeth, fed for several months on raw meat and unboiled goat's and cow's milk. In February, 1886, was attacked with frequent vomiting; this was followed by paralysis of the right abducens muscle. The paralysis extended, and was accompanied with squinting. Several paroxysms of headache then occurred at uncertain intervals, attended with loss of consciousness, and she became comatose. After death it was found that a tumor of the size of a common nut existed in the choroid plexus, encroaching upon the third ventricle. The tumor contained a gelatinous fluid with granulation cells, and colonies of actinomycetes. Professor Bollinger had given the diagnosis of cerebral tumor.—*Centralblatt für Chirurgie*, April 7th, 1888.

ANTISEPTIC ACTION OF IODOFORM AND SOME ETHEREAL OILS.—RIEDLIN finds that iodoform has no action on the staphylococcus aureus, but in view of the fact that the different forms of microorganisms are differently affected by the same antiseptic agent, it will not do to draw general conclusions. On the other hand, iodoform manifests strong antiseptic powers on Koch's cholera bacillus, even in the form of vapor. His experiments with some of the ethereal oils and other substances lead him to the following conclusions:

1. Oil of turpentine in 1 per cent. emulsion quickly arrests the growth of bacteria, but has no destructive action on the spores of the anthrax-bacillus.

2. Oils of lavender, eucalyptus and rosemary are the most efficient of the other antiseptic oils, but it is impossible to make emulsions which have antiseptic properties.

3. Oil of cloves possesses some antiseptic powers; all other antiseptic oils (fennel, peppermint, juniper, as well as camphor) are of subordinate value.

4. Peru balsam is a fairly energetic antiseptic, especially against the cholera bacillus.

5. Sodium sulpho-ichthyolate in 5 per cent. watery solution has but slight anti-bacterial action.—*Centralblatt für Bacteriologie und Parasitenkunde*, No. 17, 1888.

AN ANTISEPTIC SPRAY.—DR. CARL SEILER uses the following mixture as a spray for reducing acute and subacute inflammation of the nasal mucous membrane:

Sodii bicarb	℥ viij.
Sodii bibor	℥ viij.
Sodii benzoate, Sodii salicylate	aa gr. xx.
Eucalyptol, Thymol	aa gr. x.
Menthol	gr. v.
Ol. gaultheria	gtt. vj.
Glycerine	℥ viiiss.
Alcoholis	℥ ij.
Aquæ q. s.	16 pints.

This formula gives a solution which is sufficiently alkaline to dissolve the thickened secretion adhering to the nasal mucous membrane, and as it is of the proper density, it is bland and unirritating, leaving a pleasant feeling in the nose. At the same time it is antiseptic and acts as a deodorizer, being in this respect far superior to Dobell's solution or any other non-irritant deodorizer and antiseptic. As it is, however, inconvenient for many patients to have so large a quantity of solution on hand, one of our Philadelphia druggists made the solid ingredients into a compressed tablet, so that one, when dissolved in two ounces of water, will make a solution identical in its effects with the solution made after the above formula, and my patients prefer the tablets to the solution.

THE

Journal of the American Medical Association.

PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....$5.00
SINGLE COPIES.....10 CENTS.

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Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOPH STREET,
CHICAGO, ILLINOIS.

All members of the Association should send their Annual *Dues* to the *Treasurer*, Richard J. Dunglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, AUGUST 25, 1888.

MISMANAGEMENT IN THE MORRIS PLAINS ASYLUM.

"Jersey justice" has long been a synonym for swift, sure, common-sense justice. Some of it is badly needed in the management of the New Jersey State Asylum for the Insane at Morristown, otherwise known as the Morris Plains Asylum. Dr. Edward C. Booth, who for almost six years has been medical director of the Asylum, has sent his resignation to the board of managers, and for the following reasons, given in his letter of resignation:

The system is faulty, and the best results cannot be obtained under it; yet, with a competent and reasonable man, devoted to the welfare of the patients, at the head of each department, its defects might be, to a considerable extent, remedied. It is not for me to say whether I am such a person, but it is only justice to declare plainly that in my judgment the warden is not; and in this view I am confirmed by the practically unanimous opinion of those who have had an opportunity to know how he has discharged his duties. The medical department has been made so dependent upon that of the warden that any mismanagement on his part is immediately felt therein.

[It must be said that "the system" mentioned by Dr. Booth was the result of certain by-laws adopted by the managers three years ago. Strictly interpreted, these by-laws withhold from the medical director any authority to modify the general dietary, to designate the style and quality of the patients' clothing, even in special phases of disease, to enforce the proper laundering of clothes, to determine the color, quality or texture of bed-coverings, or of ward-furnishings in general or special cases, nor to receive packages sent by friends of the patients, and to decide what shall be given to and what withheld from the patients.]

Dr. Booth continues: I sought to correct the evils that arose by exercising the power given to me, and by defending the medical department from the warden's repeated encroachments. Thus, when the regular diet prescribed and furnished by him proved unfit, the physicians resorted freely to their power to order special diet, taking pains to cause as little inconvenience as possible. When these orders were disobeyed, as they continually were, my only resource was to complain to your board.

A public investigation was now ordered, through no act of Dr. Booth, and he disclosed the neglects that affected the comfort and treatment of the patients. In regard to the investigation ordered by the State Legislature, he says: It was my hope that the managers, who alone have the power to introduce reforms, would assume an impartial attitute. It was, therefore, a painful surprise to me to find that before hearing the evidence several of them had openly taken sides with the warden, resenting the offer of evidence of his mismanagement; and that the exposure before the Legislative Committee of abuses which it was impossible to conceal truthfully was regarded by some of the managers as an attack upon themselves. The discharge of one of my assistants, Dr. McFarlane, a physician of high character and promise, for no offense other than in zealous service in the investigation ordered by the Legislature, including a call made by him at my request upon one of the employés of the warden's department, to procure her statement, a discharge made without consulting me, and, so far as I can learn, without consulting any officer of the asylum except the warden, together with the fact that it seems to be the settled policy of the managers and the warden to inflict the penalty of summary dismissal upon any employé who should testify to abuses, destroys all presumption of a serious determination to reform the management.

Dr. Booth thus adds his name to a long roll of physicians that have for similar causes resigned their places in the Morris Plains Asylum. It seems to be in accordance with "the Genius of American Institutions," which some of our contemporaries are so fond of writing of, to select hospital wardens from a list of political workers, without regard to their sense or efficiency, or fitness for such places. Our legislators and executive officers, and the public, do not seem to know nor care to find out, in the majority of cases, what kind of person should be chosen to fill certain offices. An example of this is seen in the vote-baiting promise of a certain gubernatorial candidate to appoint, in case of his election, a railway commission composed of one farmer, one railway conductor or locomotive engineer, and one lawyer. It certainly seems strange that an asylum board, of which the late Dr. T. R. Varick was a member, could ever have adopted such by-laws as those in force at the Morris Plains Asylum. The board should have completed the farce by making the warden medical director, and restricting the duties and powers of the latter to those of a book-keeper. The trouble with the majority of hospital boards seems to be that they learn nothing from their own experience, and nothing from the accumulated experience of other boards. Hospitals for the insane cannot be conducted on the plan of a livery stable. Of course matters might be, in a certain way, simplified by assigning a certain suit of clothing and certain diet to a particular cell, room, or ward, just as there might be a rule in a hospital to put a Hamilton long splint on each patient that might occupy a particular bed, whether he have pneumonia, a fractured skull, or a broken femur; and the claim might be made that if the patient was not benefited thereby it was his misfortune. But hospitals are for the benefit of patients, not for the glory and convenience of wardens.

THE FUNCTIONS OF THE SPHENOID.

The possible functions of the sphenoid bone are discussed, and a series of experiments detailed, in an interesting paper by MR. J. A. MALONEY, in the *N. Y. Medical Journal*. In making tests to ascertain the conditions of those with impaired hearing, preparatory to applying an otophone in the case, Mr. Maloney was impressed with a singular effect in some cases of great hardness of hearing when he had reason to suspect partial anchylosis of the ossicula, or adhesions of the same when resulting from catarrh of the middle ear. It was noticed that a very low voice could be heard when the ear-piece of the otophone was placed upon that portion of the temporal bone that joins the great wings of the sphenoid, while a comparatively loud voice could not be heard when the otophone was placed over the external auditory meatus. The experiments made for determining the cause of this led to the discovery of some curious facts in regard to the sphenoid.

It was found that the impact-wave through the sphenoid was much more forcible than through the frontal, occipital or ethmoid bones. The sphenoid was made to communicate its vibrations to the diaphragm of a microphone in electric current with a telephone receiver; the drawing of a very fine silk thread, held at one end, over a free wing of the bone, could be heard in the receiving telephone. Gentle breathing against the free wing of the bone was heard in the receiver. Breathing with impact of air at the point at which the optic nerve and the internal carotid artery pass through was also heard. The only point of the temporal bone that gave like results was at the jugular fossa.

From these experiments Mr. Malony thinks it probable that the following phenomena may be traced to the sphenoid and temporal bones as factors in their development:

1. *Localization of Sound.*—The direct or maximum result in localization is probably due to aerial conduction through the meatus auditorious externus. The indirect or bone conduction being through the sphenoid (from one wing to the other, and thence to the internal ear upon the opposite side), thus probably gives a maximum and a minimum sensation by which the mental act of localization of sound is accomplished.

2. *Tinnitus Aurium.*—Owing to the extreme susceptibility of the sphenoid to conduct minute sound vibrations, may not the pumping sounds so frequently mentioned in this form of "noise in the head" be due to aneurism or some abnormal condition increasing in intensity the flow of blood through the internal carotid, ophthalmic, or great meningeal arteries in their passage through this bone, or to the same factors through the jugular, in its relation to the temporal bone?

He has produced the "singing sounds" by getting a very loose contact in a Blake telephone transmitter, the contacts of which would be, for the purpose, analagous to the articulations of the malleus and incus; whence he concludes that "singing sounds" are due to a slight dislocation of the melleo-incudal joint placed in vibration by some subjective cause, and continued by reason of the membrani tympani acting as a retractile spring, thus producing the same effect as the "Neff hammer," or make-and-break upon the induction-coil.

In regard to autophonia, remembering the theories of Gustav Brunner, that alterations in the hearing of one's own voice are phenomena of resonance, a vibration of air in the middle ear shut in by closure of the tubes, of Gruber, that autophonia is a "consonance phenomenon, caused by swelling of the mucous membrane of the middle ear," and of Sexton, that the "phenomena of autophonia are due to a disturbance of the eqilibrium of tension in the transmitting mechanism of the ear," Mr. Maloney asks: When the Eustachian tubes are closed entirely (by which equal pressure upon each side of the membrana is prevented), may not the strong vibrations of air set up in the larynx and pharynx (the mouth cavity being known as a powerful resonator) be sent to the seat of audition, through the agency of the sphenoid bone, particularly at the part situated between the ethmoid and occipital bones?

May not color audition, asks Mr. Maloney, in view of the readiness with which the sphenoid bone takes up and delivers vibrations, be due to mechanical stimulation of the optic nerve by impingement of the same upon the sphenoid bone in its passage through the optic foramen?

EDITORIAL NOTES.

PRIMARY AMPUTATION OF THE LEG UNDRESSED FOR EIGHT DAYS.—What a good constitution, country atmosphere, and "luck" can do in a case of severe injury is shown by the following case, recorded by Dr. T. J. HUTTON, of Fergus Falls, Minn., in the *Medical Record:* A family had recently arrived from the mountains of Norway, where life is chiefly pastoral, and both broad acres and farm machinery are unknown. The sickle of a mower at work seemed to fascinate a member of this family, a boy aged 9. He followed it up and kept kicking at it with his feet —first one foot, then the other. Either failing to keep step, or because the unexpected must happen, the sickle amputated his left leg at about the union of the middle and lower third. It made a clean cut, leaving a long ovate stump. A bystander stated that upon receiving the injury the boy hopped rapidly in a bee-line about four rods, upon the sound member, then suddenly assumed the dorsal decubitus, raising his stump straight up in the air. The family was both ignorant and poor—did not even know that surgical aid could be obtained at the public expense, and so it happened I was not called until eight days had elapsed, and nothing had been done for the boy save that an old woman had tied a rag around the stump. A grayish pellicle covered the stump. There was no swelling, gangrene, fetor or sepsis. There was great weakness—that was all. I remained with him twenty-four hours, administering wine, quinine, and concentrated food at short intervals. I then reamputated. He made a speedy recovery, being out-doors within a week.

"NO CODE OF ETHICS IN ENGLAND."—Says the *London Lancet:* We understand that at the last meeting of the Royal College of Physicians the Censors' Board reported upon some recent cases of alleged infringement of professional ethics. In two cases explanations satisfactory to the Board had been given, but in a third, and apparently more serious case, a decision has not yet been arrived at. It appears that the Censors' Board received information of consultations being held by certain leading Fellows of the College—gentlemen who have held some of its highest offices—with a practitioner in the West-end alleged to be a homœopath. The Censors' Board, on applying to the gentlemen, were informed that they were not aware that the practitioner in question was a homœopath, that his practice did not conform to homœopathic principles, and, indeed, as he himself had declared in response to a question from one of the Fellows, that he was not a homœopath, but an "eclectic" physician. We forbear comment upon a matter that is still *sub judice.* Nevertheless, it may be well to recall a memorable resolution of the College, passed on December 27, 1881, after full debate: "While the College has no desire to fetter the opinions of its members in reference to any theories they may

see fit to adopt in the practice of medicine, it nevertheless thinks it desirable to express its opinion that the assumption or acceptance by members of the profession of designations implying the adoption of special modes of treatment is opposed to those principles of the freedom and dignity of the profession which should govern the relations of its members to each other and to the public. The College, therefore, expects that all its Fellows, Members and Licentiates will uphold these principles by discountenancing those who trade upon such designations."

THE NEW YORK POST-GRADUATE SCHOOL.—During the winter session of 1887-1888 more than 335 different physicians attended the courses in the New York Post-Graduate Medical School and Hospital, an increase of more than 60 per cent. over last year. In the Hospital Department, about 400 operations were performed, all of major importance. To all of these the matriculates had access, as the hospital is used solely as a means of clinical instruction. This increase in the matriculation list has necessitated both larger clinical space and hospital accommodations, so that a new clinical amphitheatre has been erected, and will be used for the first time at the opening of the winter session, September 17, 1888. A new and commodious laboratory has been erected and furnished with the latest apparatus for the study of normal and pathological tissues. The nose and throat clinical room has also been enlarged. Professors Abraham Jacobi, Robert F. Weir, Joseph E. Winters, L. Bolton Bangs and Peter A. Callan, have been appointed to the Faculty. The session of 1888-1889 promises to be the most prosperous ever held.

AMATEUR TREATMENT OF EPILEPSY.—It is not often that amateur doctors get the punishment they deserve for officious, foolish and dangerous meddling. The newspapers have recently mentioned a case in which one got his just deserts. He had tried to stop an epileptic fit by pouring cold water into the mouth and upon the neck of the patient. After a short struggle the sufferer sank back apparently dead, when the would-be doctor became alarmed and placed his ear at the mouth of the patient. This seemed to revive the patient, for he caught the ear in his teeth and chewed it until, the record says, "its beauty had vanished." The epileptic was arrested on a charge of mayhem, but was discharged on the ground that he was not responsible for what he might have done in a fit. Would the amateur doctor have deserved nothing in the way of punishment had the patient been suffocated by the silly interference?

A FRENCH SEWAGE-DISPOSAL COMMISSION has recently visited Berlin to inquire into and report upon the sewering of Berlin, and its works of sewage-disposal. Referring to this visit Herr Stadtrath Marggraff says: "The gentlemen composing the commission referred to, with Dr. Cornil at their head, expressed themselves on the whole very satisfied with all the results they saw achieved by our irrigation system, eulogized in particular the general cleanliness everywhere visible; while they were most favorably impressed, not merely with the good appearance of the crops grown, but above all with the excessively clear and undisturbed character of the effluent obtained.

QUACKS PREFERRED.—The French medical press gives a curious instance of preference for quacks. A provincial magistrate received complaints that a certain person was practicing medicine illegally. The quack admitted that he practiced, but produced a diploma showing that he was Doctor of Medicine of the Faculty of Paris. He explained that while he was unsuccessful as a legitimate practitioner, as soon as he concealed the fact that he was a graduate, and posed as a quack, his fame began to spread, his income grew, and he saved and invested a considerable sum of money. He begged the magistrate to keep his secret, being sure that if it was known that he was a qualified man he would lose all his practice.

"RECOMMENDED BY ALL PHYSICIANS."—An English antiquarian has been delving among old newspaper files and has discovered what he says is the first commercial advertisement ever printed in a newspaper. It appeared in the *Mercurius Politicus*, of London, dated September 30, 1658. It runs as follows: "That Excellent and by all Physitians approved China Drink called by all the Chineans Tcha, by other nations Tay alias Tee, is sold at the Sultaness Head Cophee House, in Sweeting's Rents, by the Royal Exchange, London."

M. MAREY, Director of the physiological station of Fonds-du-Princes, has been voted 12,000

francs by the municipal council of Paris, for carrying out physiological studies having in view a better physical education of man and an amelioration of the conditions of his work.

ILLEGAL PRACTITIONERS IN PARIS.—A charlatan of the rue du Bac, Paris, who "cured all incurable diseases," has been fined $400 for practicing medicine illegally. Another illegal practitioner was sentenced, on the same day, to three months' imprisonment.

PROFESSOR WALDEYER, of the University of Berlin, will hereafter confine his teaching to Anatomy proper, naked-eye and microscopical. Professor Hertwig, who holds the Second Professorship of Anatomy, will teach Embryology.

PETREFACTION OF THE CARUNCULA LACHRYMALIS is recorded by DR. DOLSHENKOFF in a Russian journal. When the conjunctiva was removed from the tumor a prismatic structure, 11 by 9 mm., was found.

MEDICAL ANTISEPSIS.—The municipal council of Paris has voted in favor of the organization of the service of Professor Grancher for the application of medical antisepsis at the Hospital for Diseases of Children.

DR. LASHKEWITSCH, late Professor of internal medicine in the University of Charkow, left 50,000 francs for the founding of a laboratory of experimental pathology in connection with the medical clinic.

DR. SAHLI has been appointed Professor and Director of the Medical Clinic of Berne, Professor Lichtheim having gone to Königsberg.

THE WISCONSIN BOARD OF PHARMACY has recently convicted and fined two parties $50 each for violating the law.

A BACTERIOLOGICAL LABORATORY, under the charge of Professor Baumgarten, is to be erected in Königsberg.

THE IOWA PHARMACY LAW is being enforced. Two grocers have been fined $50 each for selling Paris green.

DR. W. WAGNER RITTER has qualified as Privat-docent in Mental Diseases in Vienna.

DR. SALVATORE TOMMASI, for many years one of the editors of *Il Morgagni*, died on July 13.

SOCIETY PROCEEDINGS.

Medical Society of the District of Columbia.

Stated Meeting March 7, 1888.

THE PRESIDENT, T. C. SMITH, M.D., IN THE CHAIR.

DR. JOS. TABER JOHNSON presented the specimen and read the history of a case of

A LARGE SUPPURATING ABDOMINAL CYST.

(See p. 125, THE JOURNAL, July 28.)

DR. JOHNSON also exhibited

AN OVARIAN CYST,

sent him by Dr. Sale, of Aberdeen, Miss.

History.—The specimen had been removed from a young girl, aged 16, who had been a great sufferer during the menstrual periods for the past year. When not menstruating she was of a lovely disposition, but during the flow she would act strangely and was at times so very violent, almost insane, that she was recently ordered out of her boarding house. After considerable persuasion from her mother and family physician she consented to an operation. March 2d, he removed a cyst weighing about 8 pounds, without any difficulty. On the fifth day she was rolling about the bed and was very comfortable; the pulse had not been more than 80, and her temperature never above 99.4°; and she had not had any opiates.

Dr. C. T. Caldwell presented the specimen and read the history of a case of *Myofibroma of the Uterus.*

Dr. D. S. Lamb presented *A Placenta with Three Cords and Two Sacs.*

Stated Meeting, March 21, 1888.

THE PRESIDENT, T. C. SMITH, M.D., IN THE CHAIR.

DR. P. J. MURPHY presented the specimen and read the history of a case of

HYSTERECTOMY FOR MYOFIBROMA.

(See p. 197, THE JOURNAL, Aug. 11.)

THE PRESIDENT thought the Society should be congratulated on the number of important operations that had been performed by its members.

DR. BERMANN: Is is not a genuine hyperplasia of the uterus? The microscopic examination would easily determine whether it is or not.

DR. MURPHY: The first diagnosis was a fibrocyst. The small fibrous growths in the neighborhood of the large one determined the nature of the growth. If it were simply hyperplasia then there would be simply a proliferation of the uterine tissue. Examination at the Army Medical

Museum showed the diagnosis to be myofibroma.

DR. BERMANN: In support of the idea of its being a genuine hypertrophy or hyperplasia of the uterus the diagnosis of myofibroma does not exclude the other. It contains the cavity of the uterus in its body. Its cellular construction is similar to that of the uterus; and if it is covered by the peritoneum—which fact a microscopical examination will easily determine—in his mind there could not be a doubt that we had before us a very rare thing of a genuine hyperplasia of the uterus. The existence of the fibrous nodules did not seem to exclude the possibility of his diagnosis.

DR. BUSEY: The microscopical examination of the tumor has shown it to be a myofibroma. The gentlemen are misusing terms, hence the apparent difference of opinion. It is a growth of both tissues. Dr. Bermann was right when he stated that this was a growth of the true uterine structure. There may be separate and distinct fibrous nodules. Dr. Murphy was to be congratulated upon the success of the operation. He had tried electricity, but the growth had continued to increase. We have had so many reports that have promised so much from electricity as a therapeutical agent in such growths that it will be well to have a distinct understanding as to the method of application. He is prepared for any results from the use of electricity but confessed that he was a little incredulous of the marvellous cures reported by its advocates. He could understand how electrolysis might do some good, but he could not see the efficacy of a current when both electrodes were separated from the growth by considerable distance and intervening tissues.

DR. MURPHY had passed the galvanic current from a 12-cell McIntosh battery through the tumor—the sponge electrodes being placed on either side of the abdominal wall.

DR. REYBURN: Because electricity fails in one case it does not follow that it is not good in others. If the current is measured it can be given with safety. He gave the history of a case of fibroid tumor of the uterus that had been greatly benefited by six applications, by applying one electrode to the abdominal surface and the other to the thigh. After these applications she measured nearly two inches less around the abdomen over the tumor. She had been having severe hæmorrhages every two or three weeks and was nearly exhausted. He gave from 50 to 60 milliampères, and on one occasion gave 70. He produced a severe eschar on the thigh. He thought Dr. Murphy should have used larger electrodes. Metal electrodes large enough to cover the whole abdomen are best. On one occasion he accidentally reversed the current but it did not do any harm. Electricity in fibroid tumors offers some hope. He thought it scarcely justifiable nowadays to resort to the knife. Electricity offers by far the best method of treatment. In passing strong currents we get a certain amount of decomposition of the fluids and contraction of the tumor.

DR. S. O. RICHEY was not especially interested in such cases as that from which the specimen was removed, but was interested somewhat in the use and effect of electricity. He thought Dr. Reyburn's proposition in regard to the use of the galvanometer a proper one, but he had not heard him speak of a more important factor—the direction of the current. The proper way to secure electrolysis is with the negative pole near the part to be atrophied, and the positive near the origin of the nerve supply, passing the current in the course of the nerves and securing disintegration. A current of limited power, used for a long time, has much the effect of a strong one used for a proportionately short one, and is safer.

DR. BUSEY: Was seeking information and was not opposed to electricity. Would Dr. Reyburn tell him how he knew that the current passed through the tumor. He talks about the milliampère as if it were a therapeutic agent. He understood that it simply measured the dose.

DR. REYBURN: Of course the meter is to measure the dosage. Batteries vary. He also calculated the resistance. He had not punctured the uterus, but had applied the electrodes to the abdominal walls on either side of the tumor. The index shows that the current is passing and one can see the powerful contractions of the tumor.

DR. BUSEY: But Dr. Reyburn does not prove that he passes the current through the tumor. He wanted to know the direction of the current. If he had put one electrode into the uterus he could see how the current could pass through the tumor, but not when one electrode was applied to the abdominal wall and the other to the thigh. If the abdomen measured two inches less in the case reported by Dr. Reyburn, after six applications of electricity there was nothing surprising in it, as there may have been a loss of adipose tissue, the places of measurement may have been different, or the intestines may have been distended with gas at the first examination and not at the second. Such statements are too inaccurate for him to accept.

DR. MACARDLE: Had under observation a case similar to that reported to-night. A consultation was held to determine the advisablity of removing the tumor, but it was decided to try electricity. He had since then been using a Wait's battery, with Apostoli's large electrode to the abdomen and the negative pole to the uterine sound passed into the cervix. The applications were made every other day. How long would Dr. Reyburn advise him to use the electricity to determine its efficacy?

DR. REYBURN: Hysterectomy for fibroid tumors is unfavorable and unjustifiable unless the woman's life is in immediate danger. The electricity should be faithfully tried for several months.

DR. RICHEY: Would suggest to Dr. MacArdle, that the negative pole passed through a sound to contact with the cervix—thus insulated to the point of contact—and the positive pole placed over the spinal lumbar region, might give satisfactory effects in his case. A needle at the negative pole plunged into the body of the growth would be more reliable. We must in this, as in other cases, seek immediate contact with the tissue to be influenced. To pass a current from the head to the feet, with a view of influencing an abdominal tumor, would probably not be satisfactory in its results. Those who are in doubt of the influence of galvanism might first observe its effects upon superficial growths. An effort must be made to secure immediate contact with the tissues to be influenced. How are the eschars produced by Dr. Reyburn progressing? They are often very intractable, and resist every method to control them, except a reversal of the current.

DR. BERMANN: In using the electrolytic action of the current it does not matter much, according to Apostoli, Engelmann and others, which pole is used. In strongly vascularized tumors, such as fibro-sarcomata, Engelmann advises the application of the positive pole to the cavity or neck of the uterus. As the eschar naturally produced by such strong currents as are necessary for the reduction of such tumors, varying from 60 to 250 milliampères, might produce a hæmorrhage which would be stopped by the application of the positive pole. In nervous affections Erb expressly states that it does not seem to matter much whether the positive or negative currents are ascending or descending with the nerve-current. It would be very dangerous to apply either pole at the central nervous system, as advised by Dr. Richey, for reducing tumors, as the dangers and risks would be more than any one would be willing to assume the responsibility for.

DR. RICHEY: Electrolysis takes place only at the negative pole. He deplored the use of very strong currents in the beginning of his remarks. The proper direction of the current is still a disputed question.

The specimen was referred to the Committee on Microscopy, who reported that the tumor was a myofibroma.

Suffolk District Medical Society.

SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

Stated Meeting, May 9, 1888.

ALBERT N. BLODGETT, M. D., SECRETARY.

(*Concluded from page 248.*)

DR. HAMILTON OSGOOD read a paper on

INVETERATE HEADACHE.

The common, the non-perilous ailments of our patients are apt to be superficially treated. Headache is a plague to an indolent medical man. He regards it as of little moment, and treats it accordingly. To the patient, however, the ailment is a serious matter, depriving him as it does of power in practical life, of enjoyment of vacation, of comfort at home. It entails annoyance to others, for it renders the sufferer irritable, unjust and uncompanionable. If he be not relieved when he might be, the physician naturally deserves blame for an evil of wide extent.

Inveterate headache may be relieved by one or more of the scores of internal and external remedies, but these merely wither the fruit without touching the root of the evil. Indeed, the management of this affection is so empirical that it recalls Voltaire's reflection upon the practice of medicine, which he said consisted in: "Putting medicines, of which we know little, into a body of which we know nothing." No sooner does a form of treatment promise success in a patient, whose look and daily history indicate that at last the headaches have yielded, when, like a thunderclap, a new series of attack appears, and the course adopted and heretofore efficient becomes inert.

As an illustration: A lady, single, aged fifty-five, has suffered from intense headache since her youth. She has had every variety of treatment; has consulted many physicians. Remedies which on one occasion relieved her failed utterly on another. Change of climate was extremely beneficial during one year. On returning to the same locality the following year her headache was incessant. She is known among her friends as a victim of pain, and has had every reason to feel profound discouragement. My first professional interview with her was during an attack of headache, in which, as is usual with her at such times, she seemed nearly unconscious from suffering. I was merely asked to relieve her by a subcutaneous injection of morphia, which I did, using one-half grain. Subsequently I was requested to take charge of the case. A careful examination gave me the following information: The patient was well nourished; appetite generally good; bowels in normal condition; her face showed the exhaustion caused by chronic pain; the menstrual periods (now passed) had always been regular, and, save that a headache was apt to follow them, free from annoyance of any nature. Her headache occasionally extended to the left side of the cranium, but was almost wholly confined to the right side, and never took the form of clavus. The onset of pain, however, was not peculiar to the menstrual epoch, but occurred irregularly at other times, and so frequently that the patient was never sure of being able to keep any engagement whatever. "Pain is the prayer of the nerve for healthy blood," says Romberg.[1] During the thirty

[1] Nervenkrankheiten.

years of her experience of pain this lady has taken every sort of tonic and every variety of blood-making food. The wise adage, "Eat when you are hungry, but not so long as you are hungry," has been carefully observed, as have also the ordinary laws of health.

Sudden changes of weather have always given her great discomfort. This may be explained by Wright's[2] computation to the effect that a change of one inch in the barometer increases or decreases the atmospheric pressure which the body of an average man sustains—by 1,080 pounds. "The results in periods of great weather fluctuations are headaches and even apoplexy." In my patient it is easy to imagine the painful effect of the abrupt oscillations in the circulation which would occur under such conditions.

The headaches I found to be invariably preceded by flushing of the right ear, the color deepening, as the pain appeared, to a livid hue. A little later the left ear became flushed, but never took on the darker color of the right. This anomaly in the circulation led me to examine the heart. I found it free from organic lesion, but the first sound was weaker than the second, and both sounds, as well as the character of the heart's impulse, indicated lack of power in the cardiac muscle. This explained the temperature of the hands, which were invariably cold, and caused me to suspect that the lividity of the right ear during an attack of pain, and the deeper co-existing color of the right face, as compared with that of the left, were due to weak heart and habitual lack of vaso-motor energy in the blood vessels of the right side of the head. This, I argued, was a logical accompaniment of the persistence of pain in this side, and probably showed a chronic dilatation, or at any rate weakness in the walls of the vessels of the right side, and which became apparent whenever the irritation of pain reflexively lessened the energy of the heart. During an attack, I further argued, these vessels probably dilated, and since "vessels of the brain are not supported by pressure of surrounding elastic muscles, and have, moreover, a less powerful construction than have blood vessels elsewhere,"[3] this temporary dilation of weakened vessels created a local obstacle to the onward flow of the blood, and hence the increasing deeper hue of the visible tissues of this as compared with the left side of the head and face.

The stagnation of the blood-current is naturally followed by an accumulation of carbonic acid, and in consequence by an exacerbation of pain. A good illustration of this local condition of the circulation may be seen in the purple outlines of the blood vessels of a drunkard's nose. Here the vaso-motor energy is permanently deadened by alcohol, and we see the constant presence of carbonic acid. In the patient in question, however, the local impurity of blood disappears as soon as the pain and its reflex effects upon the heart cease.

In behalf of my theory allow me to digress for a moment in order to relate the most striking instance of neurotic reflex which has ever come to my notice. Some years ago I was called to a lady who was suffering from severe pain in the right ear. I had frequently relieved this ear of large masses of wax, and the patient rightly suspecting the cause of the pain, had vainly tried to clear the ear in the usual way. When I reached her house the lady told me she was also in great discomfort from a delayed menstrual period now eight days overdue. It required fifteen minutes of time and copious injections of warm water to free the patient's ear from a very large mass of cerumen. The relief was immense, and, moreover, before I left the house the *period had appeared.*

It is not strange, then, that great pain in the head reflexively will lessen the power of the heart, and I feel very confident of the correctness of my argument in the case in question. After writing the foregoing, I happened to find in Anstie's clever book on neuralgia the following remark: "Muscular viscera which are composed of unstriped fibre, like the intestines, or of a mixture of striped and unstriped, like the heart, are probably very liable to a secondary paralytic influence from certain special neuralgia."

Still I was no nearer to a discovery of the original *cause* of the headaches. As to the quality of the pain I may safely repeat Begbie's words in relation to a similar case quoted by Day, in his book on headache: "It was not nervous, nor hysterical; it was not inflammatory, nor congestive; it was not anæmic; it was not dyspeptic; it was not of a rheumatic, nor of neuralgic character; it was not periostitic; it was not periodic." Finally, something in the general look of the patient, nothing positive, there being no especial symptom which could be named, suggested gout. The patient denied all knowledge of any case of this ailment in her family, but a careful inquiry into the family history revealed the fact that in several of her ancestors gout had existed. I at once determined to test this possibility, and took with me a quantity of the patient's urine for examination.

Previously, however, I ordered tincture of strophanthus in doses of four drops, which I subsequently increased to eight drops, three times daily. I may say here that even before I adopted any other form of treatment, so soon as the cardiac tonic began to show its effect in a relatively stronger first sound of the heart, the headaches became less intense in character, the discoloration of the right ear appeared less frequently, and when it did appear, was far lighter in hue. This

[2] On Headache.
[3] Wright on Headache.

was the first proof that the headaches were partially due to weak heart.

In examining the urine, I did not make a quantitative analysis for the uric acid present, but did find the fluid intensely and unusually acid and that the specific gravity was 1,034. This, in the absence of albumen and sugar, convinced me in my suspicion of the existence in the patient of a gouty tendency.

[In a lecture upon gout, Trousseau relates a case of headache which puzzled him extremely. This was in the early days of his practice. After a long period of doubt and insufficient treatment, the case was cleared up by a frank onset of gout, in reference to which Trousseau makes the interesting remark: "I did not then know that *gout* and *migraine are sisters.*"—*Clinique Médicale*, Vol. III.]

Prescribing the bi-carbonate of soda in scruple doses, three times daily, the urine soon became moderately acid, the specific gravity fell to 1,024 and during the following six months not only did the headaches become very infrequent, but when they appeared the pain, save in two instances, was not acute.

Meanwhile, under alternate use of the tinctures of strophanthus and digitalis, the circulation of my patient had improved to such a degree that the hands and feet became habitually warm, her face lost its expression of exhaustion, her eyes brightened and she looked years younger than when I first saw her. This change corresponded with a steadily increasing power in the first sound of the heart which was now stronger than the second sound. During this interval I substituted Buffalo lithia water (spring No. 2) for the soda, and the patient became more comfortable than she had been for several years, only two headaches of moment occurring during these six months.

This period of truce was then suddenly interrupted by onset after onset of intense headache, which, however, to my great relief, I soon found had their origin in the suppurating pulp of a molar tooth, so that they did not disturb my diagnosis of gouty headache. The tooth was soon relieved but the cranial pain held on. Antipyrin quieted the headache but caused unbearable nausea.

Just then appeared in *La Semaine Médicale*, Germain Seé's recommendation to give with antipyrin an equal bulk of this bi-carbonate of soda as a certain means of avoiding nausea. This proved a success and disposed of all tendency to nausea in this case and several other cases. In the patient in question, however, the drug soon became inert. The caffeine, bromo-caffeine, likewise guarana, of which caffeine is the active principle, were never of any use to her. Cannabis indica is perfectly negative and the patient is so annoyingly familiar with every other known remedy for headache and the inefficacy of all of these, that in her paroxysms of pain you will not wonder, notwithstanding I have a strong prejudice against the drug, that I have occasionally resorted to morphia, which, of course, relieves the pain, yet is invariably followed by severe vomiting. I did not try antifebrine because by this time had lost faith in remedies of that sort for this patient.

When she came out of this storm I found that the former effectual treatment by cardiac tonics and alkalies had utterly lost its power. This fact, together with absence of relief from medicines which benefit other forms of headache, still further convinced me that gout and not neuralgia was the root of the ailment, and I finally resorted to absolutely anti-arthritic treatment—wine of colchicum and iodide of potassium—the diet being carefully regulated. That I did not do so before, in view of my diagnosis, was due to my hope that the cardiac tonic and alkalies would prove effectual, as indeed they decidedly did for six months. Almost at once after beginning to take the remedies for gout the patient experienced a heretofore unknown sense of relief. Time is needed to prove that she has been wholly relieved of her suffering, but she is already in a condition of comfort to which she has long been a stranger, and although at times she is conscious of pain it is so mild in character she does not consider it of moment, and I hope it is due to nothing more than nerve-memory. Twice weekly, I give her a strong secondary galvanic current. This is acting well as a nerve tonic and the patient is more vigorous in every sense. She is taking 18 drops of the wine of colchicum root and 8 grains of the potash, three times daily.

A prominent feature in the symptoms of this case has been the weak heart, careful stimulation of which contributed largely to the well-being of my patient during the six months of almost entire freedom from severe pain.

This point merits especial mention. I believe we neglect the heart in many cases in which if this organ were stimulated patients would sooner reach a condition of comfort. In the patient in question, notwithstanding she has been a victim of pain for thirty years, during which she has received such a variety of treatment that it is difficult to name a remedy with which she is not familiar, and in spite of having passed through the hands of very many physicians, her heart has never before been carefully examined nor directly treated.

DR. E. G. CUTLER said: I was much interested in the first case that Dr. Osgood read. After he spoke to me about the case, in looking for some cases I found that I had nothing of my own, and I found in the library, in the last report of St. Bartholomew's Hospital, a collection of fourteen cases not unlike those of Dr. Osgood. It is a paper written subsequent to another published several years ago, of cases in which was found

a large increase in the uric acid in the urine, the chief symptom being that of headache. The history of these cases always showed the existence of gout or some such affection in some member of the family, and the headache usually was periodical, either lasting for a long time, or coming on at irregular intervals, perhaps of days or hours, or weeks or months, and lasting for years. The treatment which was found most successful, I believe, was that of a diet in which there was a great diminution in the nitrogenous matter, a diet largely liquid-farinacious; and also the treatment by hydrochloric acid. It was found by experiments which have apparently not been disproved, that under the treatment with hydrochloric acid the amount of uric acid diminished, and with alkalies it increased, and it was found that at the same time this symptom of headache would be done away with more effectually than by any other means. This article is a very interesting one, and I have not seen that it has been contradicted.

DR. PUTNAM: Dr. Osgood's paper calls to one's mind a large number of very interesting points, and of course it would be impossible to do any thing like discuss them all. That there is such a thing as gouty headache in the sense that the word "gouty" is commonly used in this country, as indicating in the most general way a disorder of the assimilation and nutrition, I suppose there can be little doubt. That is to say, that this is one of the many neurotic symptoms which are met with under these circumstances in what is called lithæmia, which is the nearest approach to gout which we have except in special cases. I think it is difficult to determine, however, to determine that the lithæmic condition acts as a cause of the nervous symptom. In the regard to the relation of the heart to headache, I suppose that we might do a good deal more than many of us do in the therapeutics of general diseases by stimulating the heart; although I think it is very hard to say many times whether the heart-sounds are a little weak or not, and that unless one examines with great care and many times, and both before and after treatment, it would be very easy to attribute to the cardiac remedy a result which really belonged to something else.

So far as the occipital headaches are concerned, I feel pretty sure with regard to some varieties of them, that they do not arise from the heart. I have seen a large number of these headaches, as every one must have who has to do with nervous diseases, because they seem to be extremely common, in connection, largely, with over-work, in persons otherwise in good health. I have, to be sure, under my care at present, a lady who suffers greatly from this headache, which continues in spite of an improvement in her general health, and she has heart disease. On the other hand, I have treated for a long time a gentleman who prides himself on his vigor and his muscle, and he has had this headache for a very long time also, though not in a severe form, but in his case it has disappeared, apparently without any one being able to say why. At one time he thought that massage helped him, and at another time electricity. He has never presented any signs of weakness of the heart. Of course, I do not mean to imply that Dr. Osgood claims that all cases are due to that cause.

Another cause of occipital headache which should be borne in mind is one which Dr. Seguin called attention to some time ago, and that is uræmic. I have recently had a patient, a lady with chronic Bright's disease, in whose case this symptom has been present. In regard to the flushing of the ears as occurring in these headaches, as a sign of cardiac disease, I must say that I cannot agree with Dr. Osgood. I think it is well known that flushing or paleness of ears or face is a very common one in migraine. Writers have been divided as to how much influence is to be attributed to alterations in the vascular supply of sensitive membranes as a cause of the pain, or whether the pain may be due to spasm or dilatation of the vessel itself; and for my part I am of the opinion that it is only a concomitant symptom as a rule; it is common to see cases of typical migraine without any such changes that we can see, and again, vascular changes occur so often in other neuralgias that it seems to me on the whole that the fairest way of looking at it is as a concomitant symptom, and not as a rule a cause of the pain.

And that leads me to say that the patient whom Dr. Osgood first spoke of is one whose case I have known of for a number of years. I have cross-questioned her with great care in regard to the congestion of the ears, and she has assured me that although the flushing of the ears is almost always associated with the headache, the two conditions are not entirely parallel, and that occasionally, sometimes in the course of a long headache, the pain may be on one side, and the flushing on the other. As regards the gouty tendency of this patient, it is a very interesting question, and I did my best, as I thought at the time, to treat her from that point of view, a year ago. It is an interesting and important matter, and I am glad Dr. Osgood brought it up. I advised her to give up sugar and starch. She did that, and got better. She took, also, iodide of potash and lithia for a considerable time. Then, after a time that diet failed, and we tried an opposite course, giving up the meat, and confining herself to a non-nitrogenous diet, and for a time that also worked very well, so that I became quite convinced, especially as I have seen something similar in another patient with migraine, about the same time, that the effect was due to the change in treatment, not to the specific diet.

In a large number of these cases almost any change of the conditions under which the patient is living will be of service, and I will say in regard to this patient, that she was very free from headache at one time, as a result of a visit to another climate, but a second visit to the same place did no good.

DR. MYLES STANDISH: I wish to refer to the headaches caused by errors of refraction, as we have heard very little about them here this evening. A very large proportion of the headaches in young children, children going to school, are due to errors of refraction, and are cured by correction of that error. In older persons very often error of refraction is the cause. I have seen very striking, almost marvellous cases. I remember one young lady who had been an invalid for a number of years, never going out on account of her constant headache; a pair of glasses enabled her to go where she pleased, to go to picture galleries, and a year later she came back and said she had never had a headache since. It is not a single case, but we see it very often. I see many such cases every year. I have perhaps have had this thing forced upon me from my own experience in the matter. From my boyhood I have had very severe headaches every two or three weeks. When I came to the medical school I took everything that I could find in the form of drug, without any result whatever; but correction of my error of refraction have reduced my headaches. I still have them occasionally, perhaps once in two or three months, where as formerly I had them every two or three weeks; and I have gone a year with only one or two headaches. When a headache lasts all the time, of course it is not so likely to be due to error of refraction as to some other cause, but when it follows close application of the eyes, especially near work, I think error of refraction should always be ruled out before going any further.

DR. PUTNAM: I simply wish to say that I most sincerely agree with what Dr. Standish has said, and I did not speak of it because I did not think of it at the moment, and this lady had been to Dr. Wadsworth to have the refraction tested.

DR. FOLSOM: I wish to speak of a case in connection with Dr. Putnam's allusion to the analogy between these cases and epilepsy. Of course, a sensory discharge may take the place of a motor discharge. I was reminded of a patient who was a type of health in every other respect, who had a very persistent headache for a number of years. She had her eyes examined for astigmatism by a number of ophthalmic surgeons and almost every remedy tried, until it occurred to me that it might be similar to epilepsy in type. The continuous use of bromide, as it is used in epilepsy, relieved them entirely. I wish that Dr. Standish would speak of the difficulty of detecting this astigmatism, and the very minute amount, requiring most careful examination, which may cause headache, an amount that would be overlooked by the ordinary examination. It seems to me it is a matter which physicians in general practice should know, and it is a point which has embarrassed me a number of times. As an interesting point in regard to that, a person may have considerable amount of astigmatism, and yet have no headache except under certain physiological conditions. That is to say, if in perfect health he has no headache at all; he can read and write, and do it late at night; but as soon as he begins to run down, a very moderate amount of reading and writing will cause headaches.

DR. STANDISH: It seems to me very rational that when the man's condition gets run down, his ciliary muscle might be affected.

DR. KNAPP: I agree with Dr. Standish on the importance and dangers of refractive headaches. In every case of severe persistent headaches that I see I try to get a thorough examination of the eyes for any error of refraction. I may say that it is about the only form of reflex headache that I have been led to take very seriously. I have looked for the other forms of headache which are said to be due to displaced uteri, cerumen, and this, that and the other, and as a rule I have not been able to find them. But I do find them in errors of refraction.

DR. OSGOOD said he did not understand the rationale of the hydrochloric acid treatment of a uric acid condition, and the proof that alkalies were beneficial in that condition was that his patient steadily improved under the use of them.

In reply to Dr. Putnam he said that the color of the ear in this case could not be merely a "concomitant," for that it held a direct relation with the state of the heart was shown by the fact that during attacks of pain the ear became less and less livid in strict coincidence with an actual increase of power in the first sound of the heart. Dr. Putnam virtually admits that in his cases of occipital headache fatigue or debility always coexisted. Inasmuch, then, as the heart never rests, is always at work, and has less repose even than the lungs, it must partake of the general debility or fatigue of the body, and consequently has less than its normal power to send the blood through such sudden arterial curves as exist in the vertebral arteries.

In regard to the eyes of the patients he had cited, Dr. Osgood said that in his paper he had remarked that all possible care was given to the eyes of one of them. He had also made himself certain that everything had already been done to assure the proper condition of the eyes of the other two patients. He thought there would be no disagreement in relation to his assertion that inveterate headache was one of the most troublesome and discouraging ailments with which the physician has to deal.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

National Convention of Charities and Corrections—Commitment and Detention of the Insane—Moral and Criminal Responsibility—How Shall Organized Charity Work—Immigration—State and Municipal Charities—Social Degradation—Summer Corps of Physicians—Floating Hospital.

In July, the Fifteenth National Convention of Charities and Correction was held at Buffalo, and the session was one of considerable interest. At the opening exercises there was an address of welcome by the Hon. Sherman S. Rogers, a welcome to the State by Gen. George S. Field, on behalf of Governor Hill, a response by the Hon. Philip C. Garrett, of Philadelphia, and the President's address, delivered by Dr. Charles S. Hoyt, Secretary of the New York State Board of Charities. In the latter the care of the dependant claims by the State was discussed, and the subject of insanity as related to pauperism received extended attention. Immigration and intemperance were spoken of as among the chief sources of pauperism and crime, and the opinion was expressed that European countries had been systematically sending paupers and criminals to America. As a preventive Dr. Hoyt recommends the examination of immigrants by our consuls and commercial agents abroad, the revision of the Federal immigration law, and the enforcement of the latter so as to prevent the landing in this country of all dependants and criminals.

The report of the Committee on the Commitment and Detention of the Insane, which comprises 100 printed pages in all, and was characterized by the Hon. Wm. P. Letchworth, President of the New York State Board of Charities, as the most valuable paper of its kind ever prepared, was presented by the Chairman of the Committee, Dr. Frank B. Sanborn.

In the discussion of the report Dr. Judson B. Andrews, Superintendent of the Buffalo State Insane Asylum, argued against the practice of taking insane patients to an asylum under false pretenses, holding that they should know where they were going and that they should be under the care of trained nurses. He believed in the commission system, and opposed the *habeas corpus* system of taking patients from insane asylums.

Dr. Wise, Superintendent of the Willard Asylum, opposed the recommendation that insane patients should be cared for by physicians of their own sex, and contended that they should have the best medical attendance that could be obtained, no matter what the sex of the physician. In his own wards he had found that three-fourths of the women patients preferred a male physician.

Dr. P. Bryce, Superintendent of the Alabama Insane Asylum, at Tuscaloosa, read an elaborate paper on *Moral and Criminal Responsibility*, in which he discussed the physical and mental organization and the influence of circumstances upon the individual as related to the commission of crime. This was followed by a paper on "The Prevention of Insanity by the Timely Control of the Dissolute," by Dr. J. C. Fisher, Superintendent of the State Almshouse, at Tewksbury, Mass. Dr. O. W. Archibald, Superintendent of the North Dakota Insane Asylum, read a paper on "Practical Hints on the Care and Treatment of the Insane," and Dr. A. B. Richardson one on "Brain Hygiene." A report was then presented by the Committee on the Training and Care of the Feeble-minded, and after it had been discussed at some length, Dr. A. C. Rogers, of Faribault, Minn., read a paper on "The Functions of an Institution for the Feeble-minded."

The delegates to the Convention were substantially agreed as to the value of charity organization societies, as shown in the discussion of the subject, "*Organized Charity, How it shall Work, and the Success that it has met with.*" Among those taking part in it was Mr. John M. Glenn, of Baltimore, a blind delegate, who warned his hearers against giving alms to blind beggars. He said that he never knew of one who did not on investigation prove to be either an imposter or a criminal, and he believed that the blind beggar was almost always a mendicant from choice rather than necessity.

Among other subjects discussed were, "Drunkard's Families," "The Treatment of Poor Widows with Dependent Children," and "Immigration." The report of the Committee on the latter was presented by the Hon. Philip C. Garrett, of Philadephia, and it was stated that the objections raised against immigration were moral, industrial, national and political. It was surely conducive to the industrial well-being of the country that it should be strengthened by a steady current of immigration; but how to keep the current healthy and not excessive, and not restrict it to certain nations or certain classes, was a problem not easy to solve. The present law was criticized, not for prohibiting convicts, paupers, imbeciles and cripples to land, but for lax administration, and because it dealt most leniently with the two most dangerous classes, criminals and anarchists. These were poisonous to American society, and it should not be possible for such individuals, who did not assimilate with our institutions, to become voters. The legislation needed should provide against importation of persons holding anarchistic opinions and of convicted criminals, and should give to the United States courts power to return such persons within five years; while the naturalization laws should be modified in order to prevent the naturalizing of these dangerous classes.

Ex-Mayor Seth Low, of Brooklyn, presented a valuable report from the Committee on Municipal Charities and Correction, of which he is Chairman. To the circulars sent out by the Committee, replies had been received only from Chicago, Brooklyn and New York. Basing conclusions on the experience of these three cities and of the States of New York and Illinois, he was prepared to say that the State took better care of its dependents than the city or county. This was because of a better classification of the subjects of care, more ample appropriations, the government of institutions, in many cases, by independent commissions, instead of city boards, the appointment to such positions of a better class of men, as a rule, and the greater freedom from debasing political influence. County or city boards generally had too much to look after, and he instanced the city of New York, where a Commission of three members have charge of the government of eighteen institutions. Although under the present Commissioners of Charities and Correction, as he was pleased to say, the administration had been greatly improved, there was an urgent demand for division of the labor and more clearly defined responsibility in this department. Considerable stress was laid in the report upon the continuous increase of dependent children in private institutions, especially in the city of New York. While the latter supported 14,000 such children, Brooklyn, because of a recent weeding out, now supported only 1,200, and it was highly desirable that this abuse should be brought to an end as quickly as possible. Nothing could be worse for the children than to be crowded in such numbers into large institutions, and nothing could be more unjust to the taxpayers of New York than to be obliged to assume the permanent care of such armies of children, without the possibility of relief in any case except as the mangement of each institution saw fit to grant it. The amount contributed by the city for the support of such children was two dollars a week each, and the sum had proved sufficient not only to pay all expenses of support, but to provide large sums toward the erection of new buildings every few years. There was, therefore, much reason in the suggestion that came from Illinois, that there is great temptation in the case of municipal institutions for relief to make them so far unattractive as to lead the inmates to discharge themselves.

The great vice of all municipal expenditure was that it was under the control for the most part of politicians of the baser sort, and what was needed was a higher grade of officials in municipal, charitable and correctional work, a larger degree of personal and political independence in the discharge of their duties, a more fixed tenure of office, and greater discrimination in the reception and discharge of inmates of institutions.

Perhaps the most striking paper read before the Convention was that by the Rev. Oscar C. McCulloch, of Indianapolis, on *The Children of Ishmael; a Study in Social Degradation*. He had upon the stage a large diagram showing the social condition of thirty families through five generations, numbering in all 1,692 persons. The history of these people had been followed up for forty years, and there had been several murderers and thieves without number among them. They did not work, and as a rule lived by begging and petty thieving. Licentiousness characterized all the men and women, and large numbers of the children died young. The result was mental weakness and general incapacity for work; but this condition of affairs was met by the benevolent public with unlimited public and private aid, encouraging the vagrants in an idle and vicious life. He believed that public relief was in a large degree chargeable with the perpetuation of such stock, and what public relief failed to accomplish in this direction was supplemented by private benevolence. Out of these 1,692 persons he said he knew of but one who had risen above his surroundings and become an honorable man. The remedy which the writer indicated was to close up official outdoor relief, check private, indiscriminate benevolence or charity, falsely so called, and get hold of the children.

There were over 400 delegates in attendance, and it was decided that the Convention should be held next year at San Diego, California.

The usual summer corps of extra physicians of the Board of Health is now at work, and the service will be continued for two months, under the immediate supervision of Dr. Moreau Norris. Each physician receives $100 a month, and is expected to be on duty eight hours a day.

This season the floating hospital of St. John's Guild is making four trips a week, instead of three, as heretofore. The Trustees of the Guild have issued a circular announcing that they have erected a new wing to the Seaside Hospital, which doubles its capacity and usefulness, and that they have improved the floating hospital by the introduction of hot and cold salt-water baths. The circular also quotes a letter from President Bayles, of the Board of Health, in which he states that it is the experience of the medical inspectors of the Board that nothing in the way of organized charity does so much as St. John's Guild to protect infant life in New York from the dangers which beset it during the warm weather. During the fourteen years that the floating and seaside hospitals of the Guild have been in existence some 350,000 poor children and mothers have received their benefits. Last year 23,970 children and mothers were taken out, and of this number 16,000 were left at the Seaside Hospital. Dr. Robert H. Green, assisted by two Board of Health physicians and two regular assistants of his own, has charge of the floating hospital.

At the last meeting of the Academy of Medicine for the season there was a social reunion and collation, and at that of the New York County Medical Association, a discussion on "The Natural Mechanism of the Expulsion of the Placenta, and the Proper Management of the Placental Period," by Drs. Harrison, Lusk, Shrady, Dudley and others. P. B. P.

"Sioux Midwifery in Chicago." A Reply.

Dear Sir:—The dignity of a journal like THE JOURNAL requires impartiality towards every member of the Association, and a little reserve in the condemnation of professional opinions based on observation. They may not be in accordance with the ideas of the editors of THE JOURNAL, or the current methods of leading members of the profession. Is it a crime to have independent notions? Every honest endeavor to find a truth is honorable. To find what is best for suffering humanity must be the aim of our profession, not the glory of individuals. We may all err sometimes in striving to accomplish our aims. Erring is a human attribute—infallible only the Pope. I am willing to admit that I have been mistaken all these years, if THE JOURNAL convinces me that women have come to grief under my management. Let THE JOURNAL prove that my patients thought themselves cruelly maltreated. If so, why should they have employed me again? My experience tells me that other women did not in the least do better than my patients.

THE JOURNAL calls my method a relic of barbarism. Why? Because I have been using my hands to complete the work in one minute which nature might *perhaps* have accomplished in five or ten days—*perhaps* not in so many weeks. Why does the surgeon take off a frozen or a necrotic limb? Why doesn't he wait until nature accomplishes this? Because experience has taught him the sooner dead tissue is detached from the living the better for the whole organism. Should not the same hold good for parturient women? THE JOURNAL speaks of the fearful danger of septic infection. Roemer, of Berlin, says that in both the non-interfering methods the ratio of puerperal sepsis was about the same. Ahlfeld's method gave an increase of post-partum hæmorrhage. I have claimed, and can prove it, that I lost in all my obstetrical practice only three cases from *any* cause. Should I not be entitled to draw conclusions and say whatever there is to be said to defend my standpoint? Speaking of air embolism; that I should not have seen one single case! How should they happen? The firm and speedy contraction of the muscular structure of the organ, induced by gentle manipulation in and outside of the uterus, until it drives the hand out, is the surest prevention of such a horrible accident. THE JOURNAL ridicules my expression about knowing the pelvic organs of my patients as well as I know their faces. I hope surgeons, and especially obstetricians, will admit that a *well educated hand* is a pretty good substitute for the eyes.

The large numbers of lying-in houses do not impress themselves upon my mind favorably. There is no control over the condition of the women after they are discharged on the tenth or twelfth day post-partum. It is different in private practice. The patient is seen time and again for months or years. One hundred well observed cases in private practice are worth thousands of hospital statistics. We are in the age of numerous statistics. They certainly are valuable, and I am far from underestimating the precious work done by these gentlemen. But for all of it, I must have the right to gain my own conviction from what I experience. Possibly my method is as old as the world. There have been observing, independent, thinking people in all ages, in all nations. Logical conclusion from effect to cause has been the guide for clear thinkers of all ages. Empiricism has been the mother of all wisdom on earth. It is not twenty-five years since chemistry attempted to reverse this order of things, by establishing and fixing the laws of molecular changes, and then by analogy could say, such a stuff will act like those, because they belong to the same molecular composition. But even then it has to be proved how the substance would act in the living organism. We know of a very few drugs what rôle they play in the organism. What we know is from observation and empiricism. To know what we are doing when we administer to suffering humanity should be our aim.

To gain the best possible knowledge of our patient's body (and spirit) is compulsory. This is carried so far as to open the cavities of the human body—explorative; and then, in the face of this fact, should it be called a crime to explore the cavity of a widely dilated parturient uterus?

From the tenor of THE JOURNAL critic I expect nothing less than to be put on trial for heresy, and sentenced to —capital punishment, in the nineteenth century, by a tribunal of inquisitors, for having an opinion of my own. Yours very respectfully, ROSA H. ENGERT, M.D.

August 8, 1888.

Acute Rheumatism in an Infant.

Dear Sir:—On reading the report of a case of acute rheumatism in an infant reported in THE JOURNAL, vol. x, No. 24, by Alex. Guthrie, M.D., of Cairo, Ill., I was forcibly reminded of two cases occurring in my own practice of recent date.

I was summoned to see the infant son of Mr. R. W., who was only 2 weeks old, with the statement that the child would cry upon the slightest movement. I found the temperature above nor-

mal, with considerable swelling of both elbow-joints. I informed the parents that it was a case of rheumatism, and gave mercury and salicin in 24 doses every three or four hours. The child in a few days was much improved, and was very soon quite well. The mother informed me several weeks later that she had suffered with rheumatism during the entire period of gestation.

The second case was the infant son of Mr. Kennedy. The physician who attended Mrs. K. in her confinement had informed me that she had after-pains of a character that he had never before witnessed, and failed to be relieved by treatment such as he had usually prescribed. About two weeks later I was called upon by Mr. K. to give him some remedy for a persistent colic—stating that both he and Mrs. K. had not had a night's rest since the birth of their child, who cried incessantly at night unless under the influence of an anodyne. His bowels were constipated, never having an action unless from the effect of a cathartic. Suspecting rheumatism from a previous history of the mother's case, I so expressed myself. Mr. K. was given

℞. Acid salicyl . . . . . ʒvj.
Bicarb. sodæ . . . . . ʒiv.
Glycerin . . . . . ʒiv.
Aquæ . . . . . ʒiv.

M. et S. A tablespoonful every four hours for thirty-six hours, then a dessertspoonful three times a day until relieved.

This treatment was continued until both she and the babe were entirely relieved of their pains, and are now quite well. Constipation in the child was relieved by a small dose of glycerine warmed and given by enema once daily. I am fully convinced that this was a case of rheumatism of the bowels commencing from the birth of the child, which was relieved in a very short time by the administration of salicylic acid to the mother.

Jessie I., a primipara, had intermittent fever at the time of the birth of her daughter. The child had a decided chill and fever on the second day after birth, which was promptly relieved by minute doses of calomel and quinine given for several days to the child. Respectfully,

B. A. DUNCAN, M.D.

West Point, Miss.

"Penny Wise—Pound Foolish."

Dear Sir:—In your editorial in THE JOURNAL of June 9, you failed to note one of the most glaring falsehoods that "Justice" makes. He says that on page 70 of the Laws of Illinois, 1887, you will observe that there were over $58,000 appropriated for the use of the State Board of Health. Please refer to Laws of Illinois, 1887, and see how this statement "pans out." He also fails to mention that $40,000 of this appropriation was a contingent fund, only to be used in cases of epidemics in the State, etc. Campaign orators are using this pamphlet to prejudice the people against the State Board of Health.

How much of the contingent fund has been used? Very truly yours,

T. J. WHITTEN, M.D.

Nokomis, Ill., August 2, 1888.

[Thus far $400 only of the contingent fund have been used. About $2,000 will be used in the investigation of the State water-supply, now in progress.—EDITOR.]

NEW INSTRUMENTS.

FORCEPS FOR REMOVING NASAL POLYPI.

BY T. C. KENNEDY, M.D.,
OF SHELBYVILLE, IND.

Having on several occasions been called upon to remove nasal polypi, I have devised an instrument which I believe will be more satisfactory to the operator than the straight nasal forceps in common use. I sent to Chas. Truax, of Chicago, and had made the forceps shown in the accompanying cut.

The blades are made with an adjustable back, and are to be introduced separately. There is a slight bend in the blades, so that the hand of the operator is kept out of the line of vision.

When the locked forceps are used, the nares is perfectly occluded, and the forceps seizes any soft, non-resisting tissue that comes within its grasp, often tearing away membrane, and even bone, that should not be disturbed. By using the separable forceps this difficulty is overcome, and the operator can see exactly what he is taking hold of, and does not run the risk of tearing away more than is necessary.

August 13, 1888.

MISCELLANEOUS.

SCAMPED DRAINS.—A case came before the Court of Appeal last week in which the plaintiff had bought a house from the defendant; the latter, in answer to an inquiry as to the state of the drains, having stated that he had spent £50 in putting them in order. Relying on this statement, the house was purchased; but soon three members of the plaintiff's family were suffering from enteric fever. On this occurrence taking place, the drains were opened up, and a condition of things was discovered which involved, amongst other things, the removal of forty cartloads of sewage-contaminated earth. For the alleged misrepresentation, the illness, the alterations,

and the consequent expenditure, the plaintiff sought relief; but the jury found for the defendant, on the ground that he had been as much deceived by the builder as the plaintiff, and that there had been no fraudulent misrepresentation. The Divisional Court refused a new trial, and this refusal has been confirmed by the Court of Appeal, mainly on the ground that there had evidently been no wilful deception on the part of the defendant. The case is instructive, as showing the limit of responsibility as regards persons selling or letting houses in the present state of the law, and as indicating the desirability, on the part of persons buying or leasing house property, of securing a definite warranty from the owners as to the sanitary circumstances of the property before purchase.—*Lancet*, August 4, 1888.

BALLADE OF A BUSY DOCTOR.—We have a Swinburnian medical poet in the person of Dr. James Newton Mathews, who read the following melodious and alliterative verses at the banquet given by the Marion County Medical Society to the Indiana State Medical Society, says the *Medical Record*. It is entitled "Ballade of a Busy Doctor":

When winter pipes in the poplar tree,
And soles are shod with the snow and sleet—
When sick-room doors close noiselessly,
And doctors hurry along the street;
When the bleak north winds at the gables beat,
And the flaky noon of the night is nigh,
And the reveller's laugh grows obsolete,
Then Death, white Death, is a-driving by.

When the cowering sinner crooks his knee
At the cradle side, in suppliance sweet,
And friends converse in a minor key,
And doctors hurry along the street;
When Crœsus flies to his country seat,
And castaways in the garrets cry,
And in each house is a "shape and a sheet,"
Then Death, white Death, is a-driving by.

When the blast of the autumn blinds the bee,
And the long rains fall on the ruined wheat,
When a glimmer of green on the pools we see,
And doctors hurry along the street;
When every fellow we chance to meet
Has a fulvous glitter in either eye,
And a weary wobble in both his feet,
Then Death, white Death, is a-driving by.

ENVOY.

When farmers ride at a furious heat,
And doctors hurry along the street.
With brave hearts, under a scowling sky,
Then Death, white Death, is a-driving by.

FACTS ABOUT FRENCH SUICIDES.—The statistics of suicides in France, which have just been published, show the same alarming prevalence of self-destruction. The total for the past twelve months is 7,572, one-fifth of these being in and around Paris. It is remarkable that poverty has only caused 483 suicides in all France, and this figure includes a morbid fear of impending misery without actual privation; 1,975 cases may be traced to mental aberration and 1,228 to physical suffering. Among the moral causes domestic trouble stands first and alcoholism next. There are 200 cases of disappointed love and only 27 from jealousy, dislike of military service giving 25. The suicidal month of the year is July, and it is worth noting that suicides have increased since the establishment of the fête on the 14th.—*Pall Mall Gazette.*

MR. W. WALKER, surgeon of Willington, Co. Durham, finds himself in a very unpleasant position through the untoward death of one of his patients in child-bed. According to independent medical evidence given at the coroner's inquest, death was the result of blood poisoning following laceration, and it was suggested that Mr. Walker's treatment was not altogether what it should have been. Although the coroner said he hardly thought the case was one to go to trial, the jury returned a verdict of manslaughter against Mr. Walker, and he would have been arrested the same evening, but on the police visiting his residence they could get no intelligence of his whereabouts.—*London Hospital Gazette.*

SUCCI'S LIQUID, upon which the faster supported himself during his fasts, is composed, according to Professor Luciani, of opium, cannabis indica, morphine, chloroform, essence of peppermint, and licorice. Succi took about 90 minims daily.

THE DRAINAGE OF SUMMER RESORTS on Long Island, according to Dr. Cyrus Edson, is most unsatisfactory. He finds that the water of the east end of the island is generally more or less contaminated from lack of drainage.

THE LIABILITY TO SCARLET FEVER, according to an analysis of 6,000 cases, is very slight during early infancy, reaches the maximum about the fourth or fifth year, and then constantly diminishes.

CHOLERA VACCINE AGAIN.—On August 20 Pasteur read before the Académie des Sciences a letter from Dr. Gamaleia, of Odessa, announcing the discovery of cholera vaccine.

THE MILWAUKEE GARBAGE CREMATORY, it is said, has been a source of annoyance on account of the smells arising from it. The contract expired on August 18.

NEBRASKA is to have a State Board of Health, if the Legislature will pass the bill adopted by the State Medical Society.

THE RECORDS OF VITAL STATISTICS in New York will hereafter be printed and open to public inspection.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending August 18, 1888.

Surgeon N. M. Fereber, detached from the "Franklin," and to the hospital, Norfolk, Va.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine Hospital Service, for the Two Weeks Ending August 13, 1888.

Surgeon George Purviance, granted leave of absence for thirty days. August 13, 1888.

Surgeon H. W. Sawtelle, detailed as member of Board to select site for quarantine station at San Diego, Cal. August 6, 1888.

Surgeon C. B. Goldsborough, granted leave of absence for thirty days. August 10, 1888.

P. A. Surgeon John Guitéras, to proceed to Sanford and Jacksonville, Fla., and Way Cross and DuPont, Ga., on special duty. August 1, 6, 9, 10, 1888.

P. A. Surgeon C. E. Banks, granted leave of absence for four days. August 6, 9, 1888.

P. A. Surgeon C. T. Peckham, granted leave of absence for thirty days. August 10, 1888.

P. A. Surgeon F. M. Urquhart, to proceed to Way Cross, Ga., on special duty. August 9, 1888.

P. A. Surgeon A. H. Glennan, detailed as member of Board to select site for quarantine station at Port Townsend, Wash. August 6, 1888.

P. A. Surgeon Eugene Wasdin, detailed as member of Board to select site for quarantine station at Key West, Fla. Aug. 6, 1888.

P. A. Surgeon L. L. Williams, granted leave of absence for fifteen days on account of sickness. August 10, 1888.

Asst. Surgeon J. B. Stoner, to proceed to Norfolk, Va., for temporary duty. August 9, 1888.